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INTERNATIONAL TELECOMMUNICATIONS

HEARING

BEFORE THE

SUBCOMMITTEE ON COMMUNICATIONS

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

INTERNATIONAL TELECOMMUNICATIONS

FEBRUARY 28, 1987

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INTERNATIONAL TELECOMMUNICATIONS

THURSDAY, FEBRUARY 26, 1987

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
SUBCOMMITTEE ON COMMUNICATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:05 a.m., in room SR-253, Russell Senate Office Building, Hon. Daniel K. Inouye (Chairman of the subcommittee) presiding.

Staff members assigned to this hearing: Tom Cohen, staff counsel; Katerine Meier and Reginia Keeney, minority staff counsels.

OPENING STATEMENT BY SENATOR INOUYE

Senator INOUYE. The hearing will please come to order. This is my first hearing as Chairman of this subcommittee and the first hearing on international telecommunications. I expect this subcommittee to be very deeply involved in the coming weeks and months in international telecommunications.

International telecommunications in all its aspects has become increasing dynamic and obviously is of vital importance to our economy; therefore, it deserves close and vigorous attention by the Congress so that the United States can best project its policies around the world.

This first meeting has two purposes. First, it will provide the members of the subcommittee with a framework to examine the issues in international telecommunications in depth. Second, it will serve as oversight of the key government officials that set policy in the international telecommunications field. I expect to have these officials appear regularly before the subcommittee.

The advent of new technologies and aggressive entrepreneurs has changed the world dramatically. Satellites now ring the world. Optic fiber cables will soon reach across oceans. Telephone switches and computers are one in the same. These new technologies and services are then joined with the needs of the rapidly expanding international business community, and the result is tremendous pressure to move information around the world, with the equipment to follow this necessarily following.

While these new communications services promise great benefits, they also undercut the premises of the old telecommunications order. Consequently, telecommunications institutions and the traditional scheme of regulation are under attack.

International organizations are being forced to change. The United States is challenging the monopoly of INTELSAT. The ITU is finding itself drawn away from its engineering past and into a

trade future. New organizations such as the International Standards Organization are taking on greater importance. All of these groups are confronting the dilemma of retaining the benefits of the old system and integrating the benefits of the new.

In such a dynamic and vital area as international telecommunications, great commercial and political pressures surely exist. These are joined with other goals, such as our demands in the national defense and foreign policy areas, to form a new and very complicated field, one far different from the telecommunications arena of the past.

The issue for us is how do we move forward in this new environment, and that is the question before this subcommittee and this hearing today.

Finally, this is the first hearing the subcommittee plans to hold on this subject because of the breadth and importance of this field. Many people wanted to testify, but we did not have the room to accommodate them. We hope to include them at later hearings.

In addition, the hearing record for this hearing will be kept open until March 6, and we encourage people to file comments with our committee.

Senator Packwood.

OPENING STATEMENT BY SENATOR PACKWOOD

Senator PACKWOOD. Mr. Chairman, thank you. In the almost 10 years I have been on the Commerce Committee, I find there are many subjects of importance, whether it is the Coast Guard or trucks or railroads or airplanes, but there is nothing more changing and dynamic than communications. I look where we were 10 years ago in communications and where we are now, let alone where we will be 10 years from now, and I realize that with a very few exceptions regulation almost cannot keep up with technology. Cases are moot before they are ever heard.

As we look down not just international but intranational communications, I think we should be very wary of thinking we can write into law policy that is going to have any efficacy for five or 10 or 15 years, because technology will simply pass it by.

I think the hearings today under Senator Inouye are the start of what are going to be some challenging and exciting days.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much, and we are pleased to have the Chairman of the Commerce Committee here with us, Senator Hollings.

OPENING STATEMENT BY THE CHAIRMAN

The CHAIRMAN. Mr. Chairman, I want to congratulate you and the ranking member on reinstituting this subcommittee. I served for several years as the ranking member with our friend, Barry Goldwater, the chairman, and he started to quit three times because we could not have a meeting. We never did really do our job, and communications policies and concerns were only handled on an ad hoc basis with a decided-upon vote ahead of time, and then the full committee might have had a few hearings to try to flesh it out.

So I am confident that your approach today is a new beginning, as they say in this town. To have State, FCC, Commerce and the Trade Representative all come together is a wonderful, educational session for me rather than hearing from the different disciplines and from the different problems in a scattered fashion. We can get a more comprehensive overview, and I think we can do a better job for the government all the way around.

So I welcome the opportunity to hear from these folks, and I appreciate the chance to be here.

Senator INOUYE. Thank you very much, Mr. Chairman.

I have a statement from Senator Pressler.

[The statement follows:]

OPENING STATEMENT BY SENATOR PRESSLER

Mr. Chairman, I will make just a few brief comments. First, I congratulate you on beginning this process this morning. I hope this represents the first step in what will be a more active Congressional role in shaping our global telecommunications policy.

I have been one who believes Congress has a responsibility to become more involved in the telecommunications policy process than we have been in the past few decades. We are on the cutting edge of the Information Age. Decisions made within the next few years will have a lasting impact on the shape of the telecommunications industry and the quality of service to telecommunications customers around the world. We should play a very active role in that decision making process.

Technological advances in the telecommunications industry have indeed led to a shrinking global village. But one of the things which concerns me in this rapidly developing technological environment is the degree to which benefits of these breakthroughs are being distributed throughout our society. While it may be easier, cheaper, and faster to transfer an increasing amount of information between the New Yorks, Londons, and Tokyos of this world, I am not at all convinced that the same is true for the rest of the country—particularly in rural areas.

As we continue to develop our international communications policies, it is important that we be careful in not establishing an "information elite" of sorts in the urban population centers of the world. We need to make certain that the benefits are spread around as evenly as possible through conscious policy decisions—not unlike the universal service policies, which I fear are demanding less and less priority in telecommunications policy discussions at all levels.

So with that Mr. Chairman, I will close my remarks so we can get going this morning. Again, I congratulate you for holding this hearing, and look forward to this Committee and Congress playing a more active role in shaping our telecommunications policies for the future.

Senator INOUYE. Our first witness is the Deputy United States Trade Representative, Mr. M. Alan Woods.

Mr. WOODS.

STATEMENTS OF AMBASSADOR ALAN WOODS, DEPUTY U.S. TRADE REPRESENTATIVE; HON. MARK S. FOWLER, CHAIRMAN, FEDERAL COMMUNICATIONS COMMISSION; ALFRED SIKES, ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION; AND AMBASSADOR DIANA LADY DOUGAN, COORDINATOR AND DIRECTOR, BUREAU OF INTERNATIONAL COMMUNICATIONS AND INFORMATION POLICY, DEPARTMENT OF STATE

Ambassador WOODS. Thank you very much, Senator.

Mr. Chairman, members of the committee, I am sure we all appreciate the opportunity to appear before you this morning to discuss international trade and telecommunications. I have submitted the full text of my written testimony for the record.

Senator INOUYE. Without objection, your full statement will be made part of the record.

Ambassador WOODS. Thank you. Thus, I will limit my remarks to a summary of some of the major points made in that testimony.

First of all, I believe we all share a concern about the trade position of the United States in the telecommunications field. The technological leadership of this industry should make it an export leader; yet, its exports have declined over the past three years to the point where we experience more than a $2 billion trade deficit in telecommunications equipment in 1986.

The causes of recent deterioration in our telecommunications trade position are diverse and complex. A strong dollar and the relative strength of the U.S. economy have clearly been factors; however, the causes that most concern Congress and the Administration deal with the effects of deregulation of the U.S. market and the divestiture of AT&T on the one hand, and, on the other hand, a continued lack of access in some important overseas markets.

Our lack of market access has itself been due to, among other things, restricted government procurement markets and restrictive standards.

I would hope we can all agree that the answer to this trade problem is not to close our own market. That would only hurt U.S. consumers and provoke retaliation against U.S. exports and in the long run make for a less competitive U.S. telecommunications industry. Instead, our focus should be on opening foreign markets to U.S. telecommunications products and services, and that is indeed a top priority on this Administration's trade agenda.

We spent much of the last 2 years negotiating with Japan to open its telecommunications market through the so-called MOSS process. In late 1985, we also embarked on bilateral discussions with a number of European countries, seeking to increase our access there. Finally, with respect to Canada, we are engaged in free trade area discussions which include telecommunications.

The approach we follow for obtaining increased foreign markets access for the U.S. telecommunications industry must take into account at least four factors. One, we must respect our international trading obligations. Two, we must avoid taking actions that might ultimately lead to foreign retaliation against U.S. goods and services inside or outside the telecommunications industry. Three, we must insure that the negotiating leverage of the President, both carrots and sticks, is sufficiently flexible to address changing circumstances and a diverse array of market access problems. Four, it is critical that government and industry work together to define our negotiating objectives, since this is an industry where conditions change rapidly and vary greatly among countries.

I do not intend to dwell on my final point because Congress is fully aware of the Administration's view on this matter, but suffice it to say that the overriding general concern that we have from a trade policy perspective is whether sectoral trade legislation would be more effective in achieving our telecommunications trade objectives than more generalized trade legislation.

Let me touch briefly on the role of the Office of the U.S. Trade Representative in telecommunications matters. USTR coordinates the development of the Administration's trade policy among the

agencies and the departments of the executive branch, and it conducts bilateral and multilateral trade negotiations with our trading partners. This is the role created for us by Congress, and it is a job that the record would suggest we perform well.

The key to success in this area is flexibility in developing policy responses to specific problems. USTR does not attempt to develop or implement all aspects of telecommunications trade policy. We work collaboratively with other agencies and draw heavily upon their resources and expertise. The quality of our performance rests heavily on our working relationships with the Departments of Commerce, State and other agencies including the FCC, wherever and whenever appropriate.

I believe the coordination of telecommunications trade policy among all of these agencies is proceeding well. I suspect my colleagues here on this panel will agree with that judgment. We all recognize that no one agency can successfully develop all aspects of telecommunications policy or trade policy given the open and pluralistic society in which we live.

Thank you.

[The statement follows:]

STATEMENT OF AMBASSADOR ALAN WOODS, DEPUTY U.S. TRADE REPRESENTATIVE

Mr. Chairman and members of the committee: The Office of the United States Trade Representative appreciates the opportunity to appear before this committee to discuss the important issue of international trade in telecommunications.

The administration recognizes the vital importance of telecommunication as the center of economic change and central to growth. Growth and innovation in the telecommunications industry are synonymous today with the growth and development of individual national economies and the global economy. Telecommunications services themselves have become a tradeable commodity largely as a result of technological advances in both telecommunications and data processing.

In the United States, telecommunications is of central importance to our international competitiveness in both high technology and more traditional sectors. By any number of measures we are the world's leader in the production, application, and use of telecommunications equipment and services.

Partly because of this, telecommunications has catapulted into one of the priority economic issues, as well as one of the priority trade issues.

BARRIERS TO TRADE IN TELECOMMUNICATIONS

It is somewhat surprising that a sector with such dynamism is also a sector that is more shielded from competition than most other economic sectors. For much of the past century, telecommunications was a sleepy, provincial business. The traditional organization of the industry on the basis of national monopolies, combined with extensive regulation by government to prevent the abuse of monopoly power. That world is fast changing—driven by technology and increased competition.

Unfortunately, progress is a two-edged sword for the United States. In the area of trade in goods, the United States has experienced a deteriorating trade position over the past four years. Our 1982 surplus of nearly $225 million shifted to a deficit of more than $2.0 billion in 1986. (U.S. exports were about $1.1 billion while imports were nearly $3.1 billion.)

In 1984, these deteriorating trade figures led both the executive and legislative branches to review the issue of telecommunications market access between ourselves and our major trading partners. We in the executive branch concluded that our deteriorating trade performance is not due to deficient U.S. technology; on the contrary, we are unsurpassed in digital switch, microwave, lightwave, and satellite technology.

We believe that the reasons for the deteriorating trade balance in this sector can be traced to the following:

The unilateral opening of the U.S. telecommunications market beginning with the 1968 Carterfone decision and culminating with the 1982 consent decree, has increased competition, both domestic and foreign, for equipment sales to private cus-

tomers and regional telephone companies. Though this increased competition has benefitted U.S. consumers, it has had adverse effects on international trade position.

Prior to deregulation, many U.S. companies were not as export-oriented as their foreign competitors and many others were not yet in existence—their creation having been stimulated by the opening up of the U.S. market. U.S. industry, however, is now placing much greater emphasis on exports and, in the process, is encountering barriers to their efforts.

Foreign telecommunications markets have not been as open. The international trading rules between countries are negotiated and agreed upon within the framework of the General Agreement on Tariffs and Trade or GATT. Ninety-two countries, and all of our major trading partners, belong to the GATT. While the GATT has been a major force in reducing tariffs and opening markets, to date it has not addressed some of the major market access problems in telecommunications.

In almost all important markets, the State monopoly or State-authorized monopoly is the overwhelmingly dominant purchaser of telecommunications equipment and the only service-provider. These entities are not covered by the Government procurement code. This code was negotiated, along with several other codes addressing non-tariff barriers, in the Tokyo round of multilateral trade negotiations. It provides for an open-tender process for some purchases by Governments. However, State Postal Telephone and Telegraph Companies (or PTT's), with the exception of Nippon Telegraph and Telephone Company in Japan are not covered by the Government procurement code. It's not surprising, then, that we find foreign governments often directing the purchase or telecommunications equipment to their domestic suppliers.

Similarly, a code to address non-tariff technical barriers to trade—the standards code—does not presently cover network equipment, because the code does not extend to Government purchasing specifications. (Although it does cover Government rules for attaching terminal equipment to telecommunications networks and standards for these products.) At times, however, local attachment rules have been fashioned to restrict market opportunities to an excessive degree. We recognize that in a world of communications systems which have evolved separately, different rules and standards among countries are going to exist. Many of these are dictated by individual countries' attempts to maintain the quality and integrity of their telecommunications networks, but some, we believe, are outright protectionist. By contrast, the U.S. standards setting process provides ample opportunities for foreign interests to participate and the FCC equipment certification procedures are almost automatic.

With respect to both the procurement and standards codes, we are attempting in the recently initiated Uruguay round of trade talks to broaden their application to address the market access problems identified above.

The final factor in explaining our deficit in telecommunications is the value of the dollar in relation to other currencies. The high value of the dollar in past years has helped make foreign telecommunications equipment price competitive in the U.S. market and U.S. equipment relatively less competitive in other markets. The value of the dollar has now dropped significantly. This should result in some improvement in our trade balance. But where non-tariff barriers continue to exist, a cheaper dollar may not have much of a significant impact.

In reviewing the trade aspects of the deregulation of the U.S telecommunications market and the divestiture of AT&T, what the administration and in particular USTR is seeking is the improved future competitiveness and trade position of the U.S. industry. Beginning in 1983, imports of sophisticated telecommunications equipment began entering the U.S. in large numbers. For example, imports of telecommunications switching equipment increased over 300 percent between 1982-1985. Telephone equipment retailers began purchasing large amounts of terminal equipment like private branch exchanges and telephone sets. Also, and more importantly, the newly diveted Bell Operating Companies and specialized common carriers have begun importing significant amounts of "sophisticated" network equipment from abroad. For example, Siemens has announced several imports of digital central office switches to various Bell Telephone Companies and NEC has begun exporting to the U.S. the next generation of its digital central office switch into this country.

As a result, we do not think it is an exaggeration to expect that imports of telecommunications equipment will continue to rise. In addition, we are also seeing an increase in foreign investment in the United States telecommunications industry.

To look solely at imports and exports, though, as the determinant of U.S. competitiveness or an indication of how open a market is would be a mistake. For example, some Europeans cite statistics indicating a U.S. trade surplus with their country (which is true) as proof that their markets are open and ours more closed than we

otherwise believe (which is not true). Such arguments are specious and only serve to confuse the issue. What is important is whether barriers exist to prevent competition from working as it should—freely and fairly and unhindered by government actions or policy. An over-emphasis on import and export figures only leads to a mercantilist recipe for protectionism.

THE ADMINISTRATION'S APPROACH TO TELECOMMUNICATIONS TRADE ISSUES

Obtaining open market access in foreign telecommunications markets—and not closing our market or restricting our imports—is a top priority for this administration. In 1985 we engaged in intensive negotiations with the government of Japan to remove all potential discriminatory aspects of the new Japanese telecommunications regulatory structure which went into effect April 1, 1985, with the privatization of NTT. To a large extent, we were successful in removing most of the structural and regulatory policies which have restricted our industry's ability to freely operate in Japan.

Clearly, Japan's telecommunications is not 100 percent open and we continue to have some disturbing problems in obtaining nondiscriminatory access in that market. Our trading position is nowhere near what it should be given the ability of U.S. industry to provide competitive equipment and services which are in demand in Japan. Ultimately, success can only be measured by increased U.S. sales and increased U.S. market share; a theme U.S. industry continues to stress and one with which we are in total agreement. With the large number of U.S.-Japan joint ventures, new business opportunities, and last year's announced sales of communications satellites and central office switches one would expect that our trade position in Japan would show improvement.

Quality and technological competitiveness are not issues here—a willingness to promote competition and open access is. We have met with the Japanese on numerous occasions the past two years to resolve difficulties as they have arisen. We are pleased with progress to date but concerned over some of the remaining problems. The administration believes the jury is still out on assessing the overall payoff of our recent negotiations with Japan.

Japan is by no means the only country where U.S. industry faces obstacles to open competition in telecommunications. Europe poses very onerous market access problems in both areas of equipment and services. In addition, telecommunications policy development in the European context presents a very complex and taxing web of policies the administration is beginning to untangle.

Most European markets are dominated by their individual PTTS, who prefer to purchase equipment manufactured within their borders. In addition, restrictive standards, testing and certification practices promote and protect domestic manufacturers at the expense of firms from abroad. As a result, U.S. firms have had little opportunity to offer enhanced telecommunications services in their markets.

Consequently, beginning in late 1985 the administration embarked on a strategy to engage European governments in concerted and coordinated telecommunications discussions. These discussions are intended to accomplish two things: (1) ascertain the openness of a foreign market to U.S. trade and investment opportunities and (2) to educate and inform our trading partners of the U.S. experience with deregulation and the divestiture of AT&T.

To date, we have engaged the Federal Republic of Germany in four rounds of market access fact-finding discussions to determine the degree of market opportunities for U.S. industry in Germany. We have also had several meetings with the Italian, Dutch, Spanish, French and other European governments. We believe these discussions are an effective mechanism to convey our concerns and expectations while, at the same time, encouraging positive movements toward liberalization in both the individual member states and the European Community.

Earlier this month, we engaged the European Community in what we consider to be the most fruitful of several meetings we have held with them over the past two years. Expert groups were organized to discuss U.S. and EC implementation of ISDN (Integrated Services Digital Networks) standards based on CCITT (Consultative Committee on Telephone and Telegraph) recommendations. We also were successful in arranging regular exchanges of information between the respective standards coordinating bodies, which we hope will permit exchanges of views as new standards are developed.

For the telecommunications services area, in particular, we have been aggressively pursuing greater market access.

We believe a strong case can be made for greater cooperation among governments in the services area in general and telecommunications services in particular. Large

differences in government regulation in communications create highly inefficient and costly conditions for the conduct of international trade. Restrictions on the free flow of information and data processing across borders creates severe competitive problems across a whole range of industries.

The best way, in our view, is to focus individual government's attention on the repercussion of their national policies is to work toward the development of shared international principles. This is the focus the United States has taken in the OECD, the GATT, and in bilateral discussions.

In the OECD, a "data declaration" was adopted in April 1985 committing OECD governments to minimize barriers to the international flow of data and develop cooperative solutions to problems as they arise. How this relates to telecommunications services is a subject currently being discussed within the OECD. The State Department and the Department of Commerce are taking the lead in this work.

The administration's insistence and Ambassador Veutter's strong persistence at the September ministerial meeting in Punta Del Este, Uruguay that the round of multilateral trade negotiations include services trade is testimony to our forward-looking approach. Our priority now is to develop a GATT framework that sets down some broad concepts for trade in services including:

Transparency and nondiscriminatory application of domestic regulations;

The principles of open market access and national treatment;

The transparency and negotiability of barriers to trade in services;

The role of monopolies, including their role as a competitor in a market outside of their monopoly responsibility; and

Procedures for consultations on emerging issues and the resolution of disputes, enabling this agreement to be contractually binding.

Once we have agreement on this framework, we would then turn our attention to applying these general principles to specific sectors. And, we intend for telecommunications services to be among the first of these sector-specific agreements. This will not be an easy task as we already have encountered significant resistance from some countries.

We also we focusing our efforts bilaterally under appropriate circumstances. In this regard, we have engaged both Israel and Canada. As a follow-up to the United States-Israel free trade area, signed in 1985, we have begun consultations with Israel to determine how the services declaration we negotiated at the time can apply as a legally-binding agreement in telecommunications as well as other service sectors.

In the current free trade area discussions with Canada, we are developing a general services framework that will be applicable to several specific sectors, including telecommunications. This is in addition to a number of very significant barriers U.S. industry faces on the equipment side of the market.

These bilateral exercises are vital. They will allow our thinking to gel on how to approach telecommunications more widely as a separate and separable services trade issue and enable us to delineate precisely our objectives and strategy for the GATT negotiations.

THE ROLE OF USTR IN COORDINATING TELECOMMUNICATIONS TRADE POLICY

The office of the United States trade representative coordinates the development of the administration's trade policy amongst the relevant agencies of the executive branch and conducts bilateral and multilateral trade negotiations with our trading partners. As such, we do not have internally a bevy of telecommunication experts although we do spend considerable time and resources on telecommunication trade policy issues. Consequently, as an agency within the Executive Office of the President, we draw on the resources of other agencies and departments in our trade policy discussions and negotiations. This is the role created for us by Congress and it is a role we continue to perform.

The task of coordinating telecommunications trade policy is not without complexity or challenge. There are differing degrees of regulation and openness in foreign markets, as well as fluctuating perceptions of what are trade issues and what are not. There are confused definitional and statistical complexities and continuous new applications of technology which make possible solutions in the marketplace to meet consumer demands that only yesterday were the domain of government-regulated monpolies. Finally, various international bodies like the GATT, OECD, CCITT, CCIR, WATTC and others, which the United States participates in but does not control, are reviewing their competence, role, and form of control over international telecommunications developments. Coordination of telecommunications policy and telecommunications trade policy is not and probably never will be a simple matter.

The key to success in this area will be flexibility in developing policy responses to specific problems. No one solution and no single approach is correct for every circumstance. Obviously, no one agency or department can be successful in developing or implementing all aspects of telecommunications policy or trade policy. Certainly, USTR cannot. Rather, we must tailor our responses to foreign country practices with respect to: their nature and severity; the implicit and explicit leverage we have over the countries and foreign entities involved; and, to the status of regulatory/legislative efforts in individual countries and multilateral bodies.

Trade policy decisions are generally coordinated at the sub-Cabinet or Under Secretary level through trade policy review group. But, because that body does not include the full complement of players in telecommunications policy, we have organized ad hoc meetings to include all agencies involved in telecommunications policy. This group includes all the agencies represented at this hearing today except for the Commerce Department's International Trade Administration. From these sessions we are succeeding in reaching a common understanding on how to address market access issues with foreign governments. In some cases, a bilateral exchange of views among telecommunication policy experts from say the FCC or NTIA will be used to promote understanding of the experiences in the United States and develop a willingness to work cooperatively to achieve market liberalizing deregulation. In other cases, an exchange of information through market-access fact-finding efforts, can yield important information. Still in others, there is a need for negotiation with the threat of an adverse U.S. reaction should improved market access or fair treatment continue to elude us. Beyond strict market access issues, an added benefit has been greater cross-fertilization in areas which are principally the domain of telecommunications policy but have some market access elements, i.e., the World Administrative Telegraph and Telephone Conference (WATTC) and the OECD transborder dataflow issues.

ECONOMIC POLICY AND TRADE LEGISLATION

It is important to keep in perspective that the United States is still one of the most competitive and productive economies. Beginning in 1981, President Reagan and Congress worked together to unleash the inherent power in our economy by dramatically reducing the tax burden borne by Americans. As a consequence, our economy is far stronger and vibrant than it was when the administration first took office. The totality of this has created over 49 months of sustained economic expansion, one of the longest periods of continuing growth since World War II.

Hand in hand with these general economic accomplishments have been numerous victories in the trade policy arena through judicious use of section 301 of the Trade Act of 1974, other trade statutes and bilateral and multilateral negotiations. The administration remains committed to its policy of free and fair trade. However, if trade is to be truly free for all countries, it must be conducted by essentially the same rules everywhere. We have challenged and will continue to attack foreign unfair trade practices and trade barriers whenever and wherever they exist.

In the face of growing--and unquestionably unacceptable—trade deficits, numerous alternative policy solutions for resolving this "problem" have been discussed in Congress, the public, and the press. Many of these proposals are of dubious merit; some would be harmful to U.S. interests, and others blatantly ignore our international commitments and responsibilities. They fail to address the fundamental causes of the trade deficit. They fail because they attempt to force "traditional" trade policy instruments, such as our trade laws, to solve problems they were never designed to solve.

Similar to the numerous proposals to resolve the trade deficit as a whole, the proposals to deal with closed foreign telecommunications markets, if passed into law in their current form, could backfire and only set in motion a series of retaliatory trade volleys between our trading partners. These proposals, which have been, and will undoubtedly be discussed again in Congress, fail to recognize the basic reality of negotiations: first, the reality of different market and policy circumstances in different countries; and second, the reality of the complexity of the issues involved in telecommunications equipment and services policy.

The administration recognizes that in the context of trade negotiations, the United States needs to be able to offer incentives to other countries to liberalize their telecommunications markets. Ours is already a virtually open market—the trade figures and our open regulatory structure attest to this fact.

The approach we adopt for securing increased foreign access for telecommunications industry must take into account two important factors. First, we must respect our international trading obligations and avoid taking actions that could lead to for-

eign retaliation which would adversely affect U.S. exports or the subsidiaries of U.S. firms within or outside the telecommunications sector. Second, we must ensure that the negotiating leverage of the President is sufficiently flexible to address a diverse array of market access problems. For example, our problems with respect to telecommunications are different in Japan, Europe, and Canada. One narrowly drawn approach, if applied to all regions of the world, might not produce the desired results given the varying levels of trade, investment and regulatory structures among our trading partners. In addition to issues of trade in goods and services we must consider the differing domestic telecommunications policies being pursued by our trading partners.

In sum, the President must have the flexibility to respond to a variety of market access problems that differ from region to region. Further, it is critical that government and industry work together to define our negotiating objectives for specific situations and for those countries where the largest problems exist for the U.S. telecommunications industry. Given the rapidly changing nature of this industry, objectives in each country will vary over time and the criteria for success will vary in each country with the numerous changing factors under consideration.

The administration supports the basic objective of various proposals being considered to open foreign markets for telecommunications products and services. Moreover, the bills recognize that negotiations will be necessary to achieve that objective, a view the administration shares.

However, any legislation which contains requirements that would require the President to take retaliatory action on a fixed schedule, regardless of other intervening factors would be counter-productive. We do not dismiss the ultimate value of retaliatory power as a negotiating tool but the President must have the discretion to use that tool in a way that will help achieve the objective of obtaining increased market access. Legislatively-mandated retaliation, with fixed standards and timetables is far more likely to result in a cylce of restrictions, to the harm of all, than to achieve enhanced authority for the President to retaliate and negotiate, but we cannot accept mandatory retaliation provisions.

In addition, any legislation which endorses a sectoral reciprocity with each country on market access problems with is destined to be unworkable. While "substantially equivalent market access" appears attactive in an area of high U.S. competiveness like telecommunications, it is seldom possible to construct balanced agreements confined one sector. A sectoral reciprocity requirement is far more likely to result in a reciprocal increase of restrictions to the level of the weaker country than to liberalize trade.

CONCLUSION

I wish to thank the subcommittee for the opportunity to testify on an issue this administration considers to be one of fundamental importance to our future trade policy. We intend to intensify efforts with our trading partners in bilateral and multilateral negotiations to get them to improve market access opportunities in telecommunications equipment and services for U.S. industry. We will continue to vigorously pursue U.S. trade interests and rights under U.S. laws and international agreements and will ensure that other countries live up to their trade agreements with the United States. We will also continue to take those actions currently available to us to achieve more open foreign markets and to defend ourselves against unfair foreign trade practices in telecommunications trade. Furthermore, we will continue to coordinate telecommunications trade policy that brings together the variety of U.S. concerns to advance market access liberalization in the various bilateral and multilateral efforts and negotiations now in progress.

[The following information was subsequently received for the record:]

QUESTIONS OF SENATOR INOUYE AND THE ANSWERS

Question. We are now involved with the GATT process and have succeeded in adding trade in services to the agenda. We are also involved in preparing for the upcoming WATTC conference on telephone regulations. How do these two meetings connect? Are there any other international telecommunications meetings that also address the same issues?

Answer. The ITU's current telephone and telegraph regulations, which set technical standards for world communications, have been in place since 1973 and consequently do not reflect the rapid technological changes and development of new services which have occurred over the past decade. To replace these outmoded regula-

tions, a World Administrative Telegraph and Telephone Conference (WATTC-88) is scheduled to be held in 1988. Its mandate is to develop a single set of comprehensive regulations to cover all current and anticipated telecommunications services.

In preparations for WATTC-88, the U.S. has sought to cast the new regulations in a manner which minimizes the scope and substance of ITU jurisdiction, particularly over international value-added or enhanced services and the private telecommunications networks on which multinational corporations and a wide variety of international services providers depend.

From a trade perspective, the outcome of the discussions in preparation for WATTC-88 could prove highly significant. If formulated too broadly, foreign domestic interests favoring the monopoly provision of telecommunications services could use the result of WATTC to advance ITU/CCITT domestic laws and regulations having a market restrictive impact. The extent to which private telecommunications networks and enhanced services are provided internationally by U.S. companies could in this manner be affected by the results of WATTC-88.

Thus, discussions on the scope and substance of ITU jurisdiction in preparation for WATTC-88 and discussions on the liberalization of telecommunications and information services in our GATT services talks must be viewed as complementary and need to be closely coordinated.

In the Organization for European Cooperation and Development (OED), telecommunications and information services trade issues are being addressed in the Committee on Information, Computers and Communications Policy (ICCP). The OECD Trade Committee has requested the ICCP to examine application of general trade principles developed for services to the telecommunications, information, and computer services sectors. The work carried out by the ICCP will serve as a guideline to member countries in their treatment of telecommunications and information services provided by foreign firms and also provide an analytical basis for negotiating telecommunications and information services in the New Round.

Question. The ITU has often been described as a technical forum to establish international standards. Is it now becoming more of a trade forum?

Answer. Although the ITU remains primarily a technical forum, determinations regarding the scope of ITU jurisdiction over technical standards could directly affect provision of private telecommunication networks and enhanced services internationally. Domestic interests favoring regulation and the monopoly provision of telecommunications services could use ITU/CCITT "regulations in a market restrictive manner. Representatives of a number of telecommunications administrations could attempt to use the results of WATTC-88 to influence the outcome of domestic debates over liberalization of telecommunications services.

Question. Many foreign telecommunications companies are setting up shop in the U.S. Do we have statistics on how much of their activities involve manufacturing as opposed to just assembling foreign made components? How much R&D do these foreign companies do in the U.S.?

Answer. The Office of the U.S. Trade Representative does not possess the resources necessary to accumulate or analyze the data requested. The Department of Commerce is better positioned to respond to this question.

Question. What is the Administration's top priority in the international telecommunications field?

Answer. The international telecommunications field encompasses a wide range of policy concerns, e.g., foreign policy, economic, commercial, trade, technological, and strategic concerns. Depending on the circumstances, each of these specific areas may be a high priority for the Administration at any particular time.

Economic, commercial, and trade concerns are currently the top priorities for the Administration in the international telecommunications field. The Administration places the opening of foreign telecommunications markets to greater competition by U.S. telecommunications equipment and service firms as its top priority. Liberalization of foreign telecommunications markets will improve the competitiveness of U.S. industry and thus will advance the economic national interests of the United States.

Senator INOUYE. Thank you very much. Our next witness is the Chairman of the Federal Communications Commission, the Honorable Mark Fowler.

Mr. Chairman.

Mr. FOWLER. Thank you, Mr. Chairman. I have extended remarks which I submitted for the record.

Senator INOUYE. Without objection, that will be part of the record.

Mr. FOWLER. I will now read abbreviated remarks.

Thank you very much. I welcome your interest in and appreciate the opportunity to speak to all of you about international telecommunications. Like you, we believe that this area is of crucial importance to the United States Government, U.S. industry and the American consumer. Further, I firmly believe that your active interest in this area will promote greater competition in international telecommunications and market access opportunities for U.S. firms abroad.

During my tenure at the FCC, we have sought to comply with our statutory mandate to insure "rapid, efficient nationwide, and worldwide wire and radio communication service with adequate facilities of reasonable charges" by establishing a competitive marketplace in telecommunications, including international telecommunications.

We believe that our nation as a whole has benefitted from these pro-competitive policies, including the participation of foreign-owned telecommunications firms. At the same time, we are increasingly concerned that U.S. telecommunications service providers and equipment manufacturers are excluded from or are not provided with a fair opportunity to compete in foreign markets. As a result, we have worked closely with the executive branch, providing technical assistance for U.S. trade discussions with countries such as Germany, Canada and Italy as well as the Commission of the European Communities.

We participated in the Market-Oriented Sector Selective—the so-called MOSS talks with Japan, providing technical expertise. As a result of these trade discussions, the Japanese adopted the FCC's "no harm to the network" approach for the attachment of terminal equipment.

We have had discussions with foreign administrations on telecommunications policy issues that are of overriding concern to the FCC. For example, I've exchanged letters with the West German Bundespost concerning their continued refusal to interconnect with additional U.S. carriers such as MCI and US Sprint. The German situation raises very serious concerns, and the responses to our inquiries, quite frankly, have been less than satisfactory.

I can tell you that there has been some initial reluctance, or was, on the part of other countries such as Japan to deal with multiple United States carriers, but in Japan the FCC and NTIA engaged in bilateral discussions with the Japanese government. Subsequently KDD, which is Japan's international carrier, agreed to interconnect with additional U.S. carriers.

Other agencies represented here today have agreed that bilateral regulatory discussions led by the FCC are most likely to be the most effective first step to begin to achieve the goals we seek for three important potential markets for the United States: The Netherlands, France and the United Kingdom, which have liberalized or are considering liberalization of their telecommunications markets.

There may be other ways to produce greater U.S. opportunities in international telecommunications, and toward that end we have initiated a Notice of Inquiry and Proposed Rulemaking to examine whether telecommunications policies and practices of foreign gov-

ernments should be considered in the formulation of our own regulatory policies.

We will be looking at whether the FCC can and should take regulatory actions that would limit foreign access to the U.S. market for firms from countries that are closed to U.S. firms.

Now, our approach, first, is to develop a model for telecommunications that would represent an ideal to be sought in international telecommunications. My hope is that this model will be useful to us in developing our regulatory policies, but it will also be useful to the Congress, the executive branch and, indeed, to other countries as we consider these complex and timely issues.

The idea of the model is to set up an intellectual framework in telecommunications to look at the components of what we think the ideal to be so we can then begin to compare countries against the model, including our own markets. We have to, for example, insure that U.S. interests are protected in international organizations where regulations govern the provision of international telecommunications services.

Of particular interest is the upcoming World Administrative Telegraph and Telephone Conference, known as WATTC, that will establish a new regulatory framework that will govern international telecommunications for the next decade and perhaps beyond.

I am going to abbreviate my testimony, Chairman, in order to keep within the time limits.

I think one of the most important things, however, that the FCC has done so far is to begin to articulate this model that I spoke of earlier and to talk about the components of that model which could be used as something that other countries we hope to encourage to aspire to and that we will be able to compare the progress of various countries against the model itself instead of simply engaging in ad hoc determinations, as I believe we have so often done in so many trade areas.

In this way, using the power of ideas over a period of time, I think it is possible to be able to move the world forward towards the idea and use that as a proper gauge of progress.

I thank you very much.

[The statement follows:]

STATEMENT OF HON. MARK S. FOWLER, CHAIRMAN, FEDERAL COMMUNICATIONS COMMISSION

Thank you Mr. Chairman and Members of the subcommittee. I welcome your interest in and appreciate the opportunity to speak to you about international telecommunications. Like you, I believe that this area is of crucial importance to the U.S. Government, U.S. industry, and the American consumer. Further, I firmly believe that your active interest in this area will promote greater competition in international telecommunications and market access opportunities for U.S. telecommunications firms abroad.

During my tenure, we at the Commission have sought to comply with the statutory mandate of efficiency, equity and national security set forth in the Communications Act by promoting a competitive marketplace in telecommunications, including international telecommunications. We continue to believe that competitive structure is the most effective means to ensure that American consumers are provided with a "rapid, efficient, nation-wide and world-wide wire and radio communications service with adequate facilities at reasonable charges. . . ."

We remain convinced that our nation as a whole has benefited from these procompetitive policies. We recognize that the very positive record we have compiled, particularly in the terminal equipment area, includes a valuable contribution by

foreign-owned firms. Many of these firms are providing telecommunications equipment or services that are responsive to the needs of U.S. consumers.

We would prefer to see these competitive efforts continue under our current, open regulatory structure. We have also become increasingly concerned, however, that the policies, regulations, or practices of foreign governments that restrict the entry of, or discriminate against, U.S. firms may place U.S. firms at a substantial disadvantage in their ability to compete in an increasingly international marketplace for telecommunications goods and services and result in a negative impact on the price, variety, quality, and technological sophistication of telecommunications goods and services provided to U.S. consumers.

Let me, if I may, elaborate on some of our concerns. We are concerned, for example, that the continued refusal of certain foreign administrations, such as the Deutsche Bundespost, to interconnect with multiple U.S. carriers has, or will have, an adverse impact on the ability of additional U.S. carriers, such as MCI and US SPRINT, to compete fairly in international telecommunications. Similarly, we are concerned about the manipulation or "whipsawing" of U.S. carriers against one another to gain unfair concessions through actions, such as the reallocation or threatened reallocation of return traffic. Such behavior has a negative impace on U.S. carriers and may serve to limit the nature and extent of competition in international telecommunications.

Further, in contrast to our harm to the network standard and other minimal regulatory requirements, foreign restrictions on the testing, certification, attachment, and sale of terminal equipment may directly limit the nature and range of international telecommunications services that are offered to U.S. consumers. Moreover, discriminatory practices and service restrictions of foreign PTTs, such as those imposed on the availability and use of cost-based leased lines, may inhibit the growth of U.S. enhanced service providers.

Finally, the "Buy National" policies of many foreign PTTs for the procurement of telecommunications equipment, including switches, and the absence of a meaningful opportunity for U.S. firms to participate in the standards setting bodies in many foreign countries can, and does, result in higher prices being paid to provide international telecommunications services. The economies of scale associated with the manufacture of telecommunications equipment, particularly switches, mean that in the absence of foreign market access U.S. carriers and U.S. consumers may be forced to pay higher prices for the equipment they purchase from U.S. suppliers.

I know that you are well aware Mr. Chairman of the FCC's continuing efforts to promote a more rational pricing structure for the recovery of fixed or "non-traffic sensitive" costs associated with the provision of telephone service in the United States. One effort of the foreign regulations and practices I have described above, however, is suppressed usage of network. The result is an increased per minute cost of telephone service for U.S. consumers.

Therefore, while we recognize that the most immediately apparent effect of foreign regulations and practices may be in the trade area, we are concerned that these restrictive regulations and practices directly impact our ability to carry out the public interest mandate that the Congress provided for in the Communications Act.

As a result of our concern that U.S. telecommunications service providers and equipment manufacturers are excluded from, or are not provided with a fair opportunity to compete in, foreign markets, we have worked closely with the executive branch agencies before you today by providing technical assistance for U.S. trade discusssions with countries such as the Federal Republic of Germany, Canada, and Italy, as well as the Commission of the European Communities.

We also participated in the Market Oriented Sector Selective (MOSS) talks with Japan by providing technical expertise on a number of important issues. Indeed, as a result of these trade discussions the Japanese adopted the FCCs "no harm to the network" approach for the attachment of terminal equipment.

We have also talked with foreign administrations on telecommunications policy issues that are of overriding concern to the FCC. I have exchanged letters, for example, with the West German Bundesport concerning their continued refusal to interconnect with additional United states carriers, such as MCI and US SPRINT.

The German situation raises very serious concerns and the responses to our inquiries have been less than satisfactory. I can tell you that there was some initial reluctance on the part of other countries, such as Japan, to deal with multiple U.S. carriers, but in that instance the FCC and NTIA engaged in bilateral discussions with the Japanese government and subsequently KDD—Japan's international carrier—agreed to interconnect with additional United States carriers.

I continue to believe, in fact that the FCC can play a positive role by simply sharing throughts on our experience with competition with our colleagues in other countries. The other agencies represented hee today have agreed that bilateral regulatory discussions led by the FCC are most likely to be the most effective first step to begin to achieve the goals we seek for three important potential markets for United States firms—the Netherlands, France, and the United Kingdom—that have or are considering liberalization of their telecommunications policies.

There may also be other ways to produce greater opportunities for U.S. firms in international telecommunications. To examine how best to provide for the efficiency, equity and national security goals provided for in the Communications Act, we have proposed the development of an international model for the provision of telecommunications goods and services. We believe that this model, which is based on four objectives—open entry, nondiscrimination, technological innovation and international comity—can serve as an ideal to be sought in international telecommunications.

It will also provide a benchmark against which national and international telecommunications policies and practices may be compared. This model, if achieved, would substantially further the goals of the Act. My hope is that this model will be useful to us in developing our regulatory policies, but that it will also be helpful to the Congress and the Executive Branch as you consider these complex and timely issues.

Our intention is to establish a balanced approach that addresses the need to consider measures that would limit access to the U.S. market for foreign-owned firms from countries that are "closed" to U.S. firms, but would also further liberalize access to the U.S. market for foreign-owned firms from countries that are "open" to U.S. firms.

We recognize that any Commission actions that would serve to limit foreign access to the U.S. market might have important trade, commercial, antitrust, foreign policy, and labor implications. As a result, we have asked parties to comment on the manner in which market access determinations should be made, including whether we should rely primarily on an executive branch determination that specific foreign markets are closed to U.S. firms.

We also recognize that we may need additional information about the present nature and extent of the activities of foreign-owned telecommunications firms in the U.S. market. Therefore, we have proposed the adoption of certain rule changes that would provide us, and the Congress, with information on foreign-owned firms' involvement in our common carrier, enhanced services, terminal equipment and core equipment markets.

I am also concerned, however, that we minimize the administrative burdens associated with these new proposed reporting requirements. Therefore, we have asked the public to address the specific question of providing us with the information necessary to fulfill our public interest mandate while at the same time minimizing the administrative burdens and therefore the cost associated with any such requirements.

As I emphasized earlier, our primary focus is the price, variety, quality, and technological sophistication of telecommunications goods and services provided to U.S. consumers. This focus has guided, and will continue to guide, our regulatory decisions concerning international telecommunications.

We must also ensure that U.S. interests are protected in multilateral forums, such as the International Telecommunication Union, which is the U.N. organization whose regulations govern the provision of international telecommunications services. These regulations can have a very important impact on the price, variety, quality, and technological sophistication of telecommunications goods and services around the world.

Of particular interest to the United States is the upcoming World Administrative Telegraph and Telephone Conference—known as WATTC—that will establish a new regulatory framework that will govern international telecommunications for the next decade and perhaps beyond. The major focus of the U.S. preparatory effort has been to maintain flexibility in any new international regulations, limit the degree of regulation as much as possible, and ensure that these regulations do not apply to non-telecommunications services, such as date processing.

The success of U.S. efforts in achieving these objectives in WATTC and in other international forums, such as the GATT and OECD, may determine the strength and vitality of our telecommunications and information processing industries as we move into the twenty-first century.

I would conclude by making it clear that I also believe that the United States must continue to play a leading role in international satellite communications. The

Congress determined in 1962 that the United States should participate in Intelsat, which is tasked with the responsibility of establishing a global satellite system to provide telecommunications services to all areas of the world. In 1978, the Congress amended the 1962 Act to provide for U.S. participation—through Comsat—in Inmarsat, which is tasked with the responsibility of improving maritime communications.

The United States has always supported these cooperative efforts in international telecommunications. I believe that our continuing commitment to Intelsat is demonstrated most clearly by our nomination of a distinguished former Chairman of the FCC, Dean Burch, for the position of Director General.

I also believe that it is appropriate that the United States look very seriously and in an open fashion at the difficult and challenging questions associated with the role of institutions, such as Intelsat and Inmarsat, in an increasingly competitive international telecommunications environment.

I know that the subcommittee may have concerns regarding the role of Comsat as the U.S. signatory to these organizations and the effectiveness of the instructional process. Some of these issues have been raised, in fact, in the context of the proposed Comsat-Contel merger. While I cannot comment on the merits of the Comsat-Contel case since it is a restricted adjudicative proceeding, I can assure you than we will carefully examine the issues involved and reach a decision in accordance with the law.

Should you wish to reassess Comsat's role as signatory to Intelsat and Inmarsat in a rapidly changing international telecommunications environment, we will provide you with any assistance that you deem necessary. Indeed, we look forward to working closely with the subcommittee and the Congress on the many important and timely issues in international telecommunications before you today.

Thank you.

[The following information was subsequently received for the record:]

QUESTIONS OF SENATOR INOUYE AND THE ANSWERS

INMARSAT

Question. Should INMARSAT have a monopoly in the provision of aeronautical satellite services?

Answer. No. We believe that the public interest would best be served if aeronautical services in the U.S. are offered on a competitive basis. We have generally deemed introduction of competition into a market to be a positive step toward serving the public interest. Our experience with the provision of domestic telecommunications facilities and services demonstrates that competition spurs innovation and promotes economic efficiency. In a competitive market, consumer choice becomes the most significant determinant of quality and types of service available. In our international separate systems decision, we stated that policies relying on competition and free trade were necessary to further the U.S. goal of promoting reliance on market forces. In other international decisions, we have found that competition in the international area would give users increased choice of services and carriers, give users more flexibility in tailoring a communication system to meet their specific needs, result in technically superior service to consumers, and result in more efficient use of facilities. We anticipate that competition will lead to development of aeronautical satellite services.

We believe that competition in the provision of aeronautical services can be achieved on two levels. First, there appears to be an opportunity for competition among those carriers which choose to provide aeronautical services using INMARSAT, rather than separate dedicated systems. We believe it is important to develop competition within the framework of the INMARSAT system because the INMARSAT system may afford the first opportunity for the provision of aeronautical services.

Second, there is a distinct possibility of competition among alternative satellite systems. U.S. entities are now planning to construct and operate their own aeronautical satellite systems. The aviation industry is planning an aviation satellite system (Avsat) which would connect with ARINC's current VHF system to extent its service over ocean areas which are now inaccessible to its members. In July 1986, ARINC announced the offering of the Avsat service. It stated that, by using "add-on" packages on existing satellites, it could start service in 1988 in the Pacific Ocean, the Atlantic Ocean, and the Caribbean Ocean areas. We understand that the Avsat system will use frequencies in the L-band and will provide voice and data

services for air traffic control, aircraft operational control, administrative communications, passenger telephone service, and surveillance and navigation service. ARINC anticipates two of its own satellites by the early 1990's and six satellites by the mid-1990's. As we stated in our Aeronautical Order (FCC 87-22, released January 12, 1987), INMARSAT's entry into the aeronautical market should not forclose development of other satellite systems providing aeronautical services. Ultimate U.S. participation in an INMARSAT aeronautical program should not preclude consideration of future applications to provide service through other systems.

Question. Is the United States planning to sign the INMARSAT amendments to permit INMARSAT to offer aeronautical services?

Answer. We understand that the Department of State is considering whether to sign the amendments to the INMARSAT Convention and Operating Agreement which will allow that organization to provide these new services. The State Department is consulting with the FCC and other appropriate agencies with respect to that decision. It appears that it plans to make a decision by the end of this year.

Question. How will INMARSAT's entry into this area affect our position at the upcoming Mobile WARC?

Answer. The U.S. is proposing changes in the two 14 MHz paired bands currently allocated to Aeronautical Mobile-Satellite (Route) Service [AMSS(R)] in the L-band. AMSS(R) is a mobile-satellite service providing communications to support domestic and international air traffic, including air traffic control. The (R) designation indicates that the spectrum is reserved for aeronautical communications for enroute flights related to safety and regularity of flight.

The proposed change would convert the AMSS(R) bands to generic mobile satellite (MSS) bands to encourage the development of new and possibly competing services. MSS would permit all forms of mobile satellite service, including land, maritime, aeronautical and aeronautical (R). In order for mobile satellite services other than AMSS(R) to have primary status, they would be required to be interoperable with AMSS(R). In addition, aeronautical (R) service would be given priority access with real time preemptive capability so that it could fully meet its requirements.

INMARSAT and the aviation community have opposed the U.S. proposal arguing that there are technical difficulties in sharing these bands with different mobile satellite services. The U.S. strongly disagrees with this view.

Question. When will the FCC begin its proceeding to determine how U.S. users will access the INMARSAT aeronautical space segment on a competitive basis, and when will the proceeding be completed?

Answer. The FCC is preparing a notice of proposed rulemaking which will initiate a rulemaking proceeding focusing on policy alternatives and related issues concerning the competitive provison of INMARSAT aeronautical services in the U.S. We expect that the notice will be released this spring. The public will be invited to comment on our proposal and we hope to have a final decision on this matter by September 1987.

Question. I understand that INMARSAT has engaged in talks directly with the European aeronautical communications provider. Yet similar talks have not occurred with the U.S. provider, ARINC. What are your views about whether such direct discussions should occur?

Answer. In our view INMARSAT's reluctance to speak directly with ARINC regarding access to space segment is legally justified. ARINC has argued that it should be given access similar to that given to SITA (Societe Internationale de Telecommunication Aeronautique), an international organization. SITA, however, has merely requested experimental service which is provided, according to INMARSAT policy, without charge to the user. ARINC has informed the FCC and other government agencies that it is not interested in seeking experimental service from INMARSAT. Consequently, ARINC fails to acknowledge that as a U.S. company seeking regular, rather than experimental service, it clearly falls under different provisions of the INMARSAT Convention and must, therefore, obtain paid access to INMARSAT through a duly-designated U.S. signatory, INMARSAT has informed ARINC of this fact.

GENERAL

Question. Last year, Congress ordered that the key government officials involved with international telecommunications policy meet regularly. Has this occurred?

Answer. An interagency group composed of representatives from the Department of Commerce, the Department of State, the United States Trade Representative, and the FCC meets regularly to discuss international telecommunications policy and trade matters. I believe that these meetings have resulted in a more focused U.S.

government effort in internaional telecommunications. Specifically, we have agreed that the most efficient and effective approach to promote liberalization abroad is to divide responsibility among the relevant agencies when in comes to taking the lead for bilateral discussions. This approach focuses each agency's resources on what it does best and at the same time permits the other agencies to weigh in with their expertise when necessary.

INTELSAT

Question. The U.S. adoption of its pro-competitive alternative satellite policy has caused many to question our commitment to Intelsat. What does the U.S. see as the future of Intelsat?

Answer. I do not think that there is any question that the U.S. retains a strong commitment to Intelsat as an institution and as a global provider of telecommunications services. The FCC believe that Intelsat provides services that are of fundamental importance to the vitality of the world telecommunications network as a provider, for example, of services to developing countries, and of capacity essential to the rapid restoration of international service.

The FCC sees a strong continuing role for Intelsat as a provider of international telecommunications services, particularly under the leadership of a Director General with the ability and vision necessary to guide Intelsat in the challenging task of adapting to a modern teelcommunications environment that include fiber optic cables and separate satellites. For these reasons, we have strongly supported the nomination by the U.S. of Dean Burch for that position.

We have made clear, for example, that we see no basis to conclude that Intelsat will encounter serious problems or lose substantial busienss to separate systems entrants in a limited market since substantial growth is projected for the services that are protected by the Executive branch restrictions. These restrictions protect from competition those services offered over the public switched network that comprise the vast majority of Intelsat revenues. Other factors, such as the historic strong growth of international satellite communications and the projected growth for the future, suggest that Intelsat will have a substantial presence, and will, indeed, continue to be the preeminent provider of satellite services in a rapidly changing international telecommunications market place.

COMSAT

Question. It is now 25 years since Congress passed the Communications Satellite Act creating Comsat. Since then, satellite technology has changed greatly, competition has come to communications, Comsat has diversified, and now the FCC is considering whether to permit Comsat and Contel to merge. In light of all these changes, do you believe it is time to review the 1962 Act, as well as the 1978 Act, to determine if these laws best serve the interests of the U.S.? I also wonder whether it is time to review the over fifty year old Cable Landing License Act.

Answer. The importance of these developments to the United States government, the telecommunications industry, and U.S. consumers is demonstrated by early attention given to these issues by this Congress. The nature of international telecommunications is changing. Among the most important changes that have taken place in international telecommunications is the advent of separate satellite systems and fiber optic cables. While the Commission has already looked at the question of separate satellites, a review of the other questions, such as Comsat's role as signatory to Intelsat and Inmarsat, is entirely appropriate. Indeed, some of these issues have been raised in the proceeding concerning the proposed Comsat/Contel merger. We would also welcome an opportunity to work with the Congress on these issues, however, and will provide whatever assistance you deem appropriate should the Congress wish to review the Cable Landing License Act, or the 1962 and 1978 Acts.

QUESTIONS OF SENATOR DANFORTH AND THE ANSWERS

Question 1. I know that restrictive foreign policies and practices contribute to the trade deficit and have a negative impact on the ability of U.S. firms to compete fairly in foreign markets, but what is the effect of these restrictive foreign practices on U.S. consumers?

Answer. I think you are quite right to be concerned about the effect of these practices on U.S. consumers. We hope in our international proceeding to determine the exact nature and extent of the negative impact that restrictive foreign practices may have on U.S. consumers. It's hard for me to imagine, though, that foreign re-

strictions that prevent the sale or attachment of terminal equipment do not have a negative impact on the variety of international telecommunications services that are offered to U.S. consumers. Similarly, U.S. switching equipment allows our telephone companies to provide all sorts of new telecommunications services, including advanced 800 services. My impression is that it's often years before these services are offered internationally. Therefore, I'm afraid that approaches, such as the "Buy National" policies of foreign PTTs not only have a negative effect on our trade position, but also limit the services available internationally. So your question goes directly to the heart of what we will fully explore in the international proceeding we initiated last December.

Question 2. To what extent do you see trends towards liberalization in international telecommunications that will lead to greater market opportunities for U.S. firms and what can the U.S. government do to reinforce those trends?

Answer. I do see significant movement towards liberalization in a number of countries. I base this in large part on the very friendly discussions we've had over the past several years with representatives from a wide variety of countries, including France, the Netherlands, the United Kingdom, Sweden, Finland, Spain, and Japan. It's been clear to me from these discussions that there are a number of forward-thinking officials involved in telecommunications policy in other countries that are very astute and recognize that its technology is the driving force behind liberalization and that they can have the same benefits from greater competition that we have seen here in the United States.

I believe that we should do whatever we can to reinforce and assist the progressive elements in other countries that are seeking to liberalize. Often this simply may involve providing them with information and our perspective on the U.S. experience. One very important benefit that we have seen, for example, is the large stimulation of usage that has resulted from the introduction of competition and toll deloading. This results in more efficient use of the network and can lead to increased revenues.

The discussion is not and should not be a monologue, though. I think that we can probably improve on some of our policies by learning from the experiences of other countries. I think it's particularly important that we have this dialogue at an expert level, particularly as we explore new concepts, such as open network architecture, that may well have important implications for international telecommunications.

Question 3. Has the U.S. government done enough to open up Japanese telecommunications markets to U.S. firms?

Answer. I think that between the MOSS trade talks with Japan, and the continuing bilateral discussions that the FCC and NTIA have with MPT that we've done quite a lot and we've made some clear progress. Time will tell whether it's enough and the extent of that progress in dollar terms for U.S. firms. I believe, though, that our success in having the Japanese adopt approaches that are in accord with our philosophy tends to highlight the continued intransigence of certain countries, such as West Germany, to reform restrictive telecommunications policies and practices.

I welcome, for example, the Japanese decision to allow facilities-based competition and in computerized services provided over the network. Competitive provision of these services should have very positive implications on market access for U.S. firms. This doesn't mean that I don't have any remaining concerns with regard to Japan, though, and I would cite as one example the treatment of Motorola with regard to its proposed cellular system.

Question 4. In light of the difficulties that the United States has had with Intelsat in the recent past do you think that it will be possible to ensure strong U.S. support for Intelsat?

Answer. I think it's important to put the past difficulties behind us and I believe the best way to do that, and to demonstrate clear and strong U.S. support for Intelsat is to have Dean Burch as Director General. I think he has both the demonstrated ability and vision necessary to guide Intelsat in the challenging task of adapting to the modern international telecommunications environment that includes fiber optic cables and separate satellites.

Senator INOUYE. Thank you, Mr. Chairman.

Our next witness is the Assistant Secretary for Communications and Information, Department of Commerce, the Honorable Alfred Sikes.

Mr. Secretary.

Mr. SIKES. Mr. Chairman, I, too, have submitted for the record extended comments and would like to summarize.

Senator INOUYE. Without objection, so ordered.

Mr. SIKES. The communications and information sector is by many estimates approximately a $600 billion business worldwide. By the turn of the century, it is anticipated that it will be a $1 trillion business.

I think we understand the importance of the communications industry and the design and the manufacturing process. I think we also understand the importance of communications as the centerpiece of a service economy.

Finally, I think we are beginning to increasingly understand the importance of communications technology as the champion of ideas, as it breaks down the world's barriers through satellites, VCRs and other technology.

At the present time in this country, we are involved in a national appraisal of the United States' position in the global economy. It seems to me as we conduct that appraisal of communications that there are two important questions that will frame the appraisal.

First, will the United States be able to maintain and hopefully strengthen our capacity to effectively and economically distribute information.

Secondly, will the United States user community, from the remote residential customer to the owner of a global network, be able to avail itself of favorable foreign innovations and prices while foreign users have the same access to our providers.

I think underlying this appraisal, Mr. Chairman, it is good to comment that the United States is technologically strong, that in central office switches, fiber optics, satellites, computers, cellular radio, and other tools of telecommunications, we have a strong global position.

The Commerce Department is basically guided, as we look at these questions, as we undertake this appraisal, by three goals. First, competitive parity between the United States and foreign providers.

We seek that competitive parity in the areas of technical standards set by International Telecommunication Union organizations.

We seek that competitive parity in the protection of intellectual property, as is plain, for example, in the Canadian discussions over their compensation for the retransmission of our signals.

We also seek that competitive parity in our approach to the revision of the AT&T consent decree, where we find that the regional Bell Operating Companies, for example, are not allowed to provide certain information services that foreign providers can and are providing in this market.

A second goal is the enlargement of communications options. Right now, a high frequency radio conference is going on in Geneva where the nations of the world are competing for spectrum in the high frequency range, which is a finite resource, as the committee knows, and is a resource that we use for the Voice of America, for Radio Free Europe, for Radio Liberty.

We are also seeking to expand options as we work for alternate international satellite systems, known as the separate satellite system initiative that President Reagan began.

A third goal that we have is market access; simply stated, equal treatment. We must assure U.S. providers access to the same level of market demands as foreign providers enjoy.

Now, I know a question of this committee has been the extent to which the U.S. Government is effectively organized to pursue those goals. I think it's safe to say that we're not organized the way the foreign administrations that we deal with are organized. In those instances, government is frequently the provider. In effect, the politicians are the industry. They are generally organized into a single ministry which has the technical, economic, legal, and political talents all in that single ministry.

The U.S. approach is certainly fundamentally different. We are more pluralistic in our society and our economy and, in turn, in our Congress and in our Executive branch.

I think there have been two significant steps made to assure better coordination of our activity. Secretaries Baldrige and Shultz signed in November 1984 an agreement that resulted in State and Commerce cochairing the Senior Interagency Group on International Communications and Information Policy. I think that has been a step forward in providing closer coordination.

As was earlier indicated, we have more recently begun to very actively coordinate our market opening efforts. We now have an active committee working toward that end, and the agencies represented at this table are part of that effort.

So while pluralism can be a weakness, we certainly know it to be a strength. To the degree it is a weakness, we simply have to do a better job in coordinating and making more cohesive our international actions.

Thank you.

[The statement follows:]

STATEMENT OF ALFRED C. SIKES, ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION, DEPARTMENT OF COMMERCE

Mr. Chairman and Members of the Subcommittee: Thank you for this opportunity to review NTIA's overall goals and strategies in the international communications and information services field.

THREE FUNDAMENTAL GOALS

NTIA has three fundamental, related goals in this key "high-tech" sector: (1) first, to ensure greater competitive parity between American companies and their international trading rivals; (2) second, to support special national needs and new, emerging business communications requirements; and (3) third, to expand equitable market access for U.S. firms overseas.

Let me discuss each of these three goals briefly, and indicate some of the ways we are trying to achieve them.

Ensuring greater competitive parity

In addition to seeking to open overseas markets to U.S. competition, we have a parallel goal of promoting greater competitive parity between U.S. and foreign-based firms when it comes to trade and investment. Over time, a West German company, for example, which can market its products freely both at home and in the United States, inevitably will have an advantage vis-a-vis an American company that is largely foreclosed from exporting to countries such as West Germany, the world's third largest communications market. Reducing barriers to U.S. exports in such countries, therefore, is important to sustaining competition in world equipment and services markets.

Ensuring competitive parity, however, also requires our taking a diversity of other steps. It means, for example:

Canadian copyright

Urging the Canadian Government to provide full and fair protection of U.S. intellectual property rights by halting the unauthorized commercial exploitation of U.S. broadcast signals, will give U.S. and Canadian program producers the same legal protections. It should also increase the opportunities available to American program producers in the Canadian market.

More transparent standards

The technical standards which are adopted by international bodies such as the International Consultative Committees on Telephone and Telegraph (CCITT) and Radio (CCIR) directly affect the equipment sales and services opportunities that are available to American companies abroad. NTIA officials currently chair and participate in a number of CCITT and CCIR study groups. Through these efforts, we seek to ensure that functional standards are developed in open forums which will facilitate, not hamstring, U.S. competitors.

Reducing self-imposed restrictions

Foreign-based companies today can manufacture equipment here, offer "information services," and participate in our long-distance services market. Indeed, affiliates of British Telecom, Siemens, Cable & Wireless, and the French PTT, for example, are already doing so. At the same time, U.S. regulatory and judicial constraints limit the ability of U.S. companies to compete. We are working with the Justice Department and the FCC to cut back on unwarranted regulation and consent decree restrictions that handicap U.S. competitiveness.

Safeguarding U.S. needs

The rules promulgated by the International Telecommunications Union (ITU), for example, directly affect the size and technical character of international radio service and equipment markets. ITU rules governing the use of the geostationary orbit by communications satellites have a direct bearing on technological progress. The "guidelines" which the Organization for Economic Cooperation and Development (OECD) adopts regarding computer-data processing services have important ramifications for the U.S. companies that are now competing successfully in international services markets.

In each instance, ensuring that any rules adopted are consistent with U.S. interests requires not only a knowledge of the underlying technologies, but also an appreciation of the commercial dynamics of the particular enterprises involved. By harnessing both engineering and market experts, NTIA has been able to make significant contributions toward safeguarding U.S. interests.

Accommodating special needs and requirements

Just as U.S. business and industry increasingly depend on international communications, so too does the Government. Communications and information services are critical to our national defense, foreign policy, and international information services such as those provided by USIA. Because of our management of Federal radio spectrum use, we have a unique appreciation of Federal requirements. Overseas, in the ITU and other forums, we have worked to ensure that the communications channels our Government requires to meet its worldwide commitments are readily available.

At the same time, we have also sought to ensure that emerging U.S. business communications requirements are satisfied. Our efforts to facilitate the advent of new, U.S.-based international satellite systems, for example, have been aimed at ensuring that American business has available new communications options that are tailored to their specific needs, while maintaining the economic strength and role of the global INTELSAT system. Affording U.S. television organizations new international communications options, for instance, should benefit them by expanding their commercial sales overseas. At the same time, this should also reinforce Government efforts to "tell America's story to the world" more effectively. Our "separate satellites" policy is a good example of where international communications, trade, and the overall national interest are all furthered by implementing the President's November 1984 decision.

Expanding equitable market access

We want to expand competitive access to overseas communications markets for American firms. As indicated in our recent report on the communications market effects of the AT&T consent decree, the current international environment too often

is tilted against U.S. firms.[1] By virtue of deregulatory steps taken by the Federal Communications Commission (FCC), and the industry changes which resulted from the 1984 Bell System breakup, our communications market is wide open in virtually all significant regards. But while foreign-based competitors have ready access to American markets, too many communications markets abroad remain essentially closed to our exports.

Today, the United States is a world leader in telephone switching equipment, fiber optics, mobile radio, transmission systems including communications satellites, and related "high-tech" products. Our ability to capitalize on this technological leadership commercially, however, is jeopardized by persistent barriers to U.S. competition abroad.

The telecommunications and trade agencies are now working aggressively and cohesively to ensure greater U.S. commercial access through talks with European and Asian administrations. In our talks with West Germany, France, Italy, Spain, and Japan, one of our principal focuses has been on the restrictions which limit U.S. participation in communications equipment and developing value-added services markets. We have tried to draw upon both our understanding of U.S. market experience and the relevant technologies to persuade other nations to relax existing barriers to U.S. competitive entry.

In addition, NTIA has concluded a telecommunications protocol with the Chinese Ministry of Posts and Telecommunications that has as one purpose expanding U.S. opportunities there. We have also worked to increase U.S. opportunities in Caribbean and Central American countries.

BROAD PERSPECTIVE AND COOPERATION REQUIRED

Most international communications and information policy issues are multifaceted, and dealing with them effectively requires an ability to draw upon diverse talents and expertise. Legal and technical questions are raised. Negotiating with foreign administrations which are already familiar with U.S. market developments requires considerable facility regarding both U.S. international and domestic communications policy topics, plus an understanding of international commercial economics.

Our trading partners usually are well-organized to advance their own national interests and standing in the "information economy." Considerable expertise in the various disciplines bearing on international communications and information policy typically is assembled in a single ministry or department overseas. With few exceptions, our trading partners come to the negotiating table equipped with the full range of technical, economic, legal, political, and other talents needed to address the questions that arise.

In many respects, our domestic policies—which provide incentives and opportunities for increased competition—make our international efforts even more important. In some countries, the politicians control most of the producers of communications and information goods and services. Foreign administrations, in effect, are both the gatekeepers and the customers. And, in most instances, foreign corporations can readily marshal strong political support on their behalf.

The President of France, for example, routinely will open telecommunications trade fairs and urge the purchase of French products. Recently, as reported in the trade and general press, the West German Government intervened with France on behalf of Siemens AG in an attempt to forestall AT&T-Phillips from purchasing a French equipment company, CGCT. In response, the U.S. Government initiated actions designed to preclude a political rather than a commercial decision by the French. Time after time, one will see greater, high-level political involvement on the part of our trading partners than traditionally has been true in the United States.

Central to the concept of fair bargaining is a rough parity of negotiating positions. Individual U.S. companies, even major multinational firms with the resources of IBM, Motorola, and AT&T, for example, cannot be expected to negotiate market openings effectively with foreign administrations. This can usually be accomplished only through talks on a government-to-government basis. Not only is active involvement on the part of the U.S. Government required—if we hope to achieve our overall international communications objectives—but that involvement must be: (1) "regularized"; (2) carried out at a sufficiently high level; and (3) able to muster the requisite technical, economic, and commercial expertise.

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[1] See NTIA Special Report: "Assessing the Effects of Changing the AT&T Antitrust Consent Decree" (February 1987).

IMPROVED COORDINATION PROCEDURES

In November 1984, Secretaries Baldrige and Shultz agreed to new arrangements regarding the respective responsibilities of the Commerce and State Departments for international communications and information policy. Under this agreement, Commerce and State co-chair the Senior Interagency Group on International Communication and Information Policy (SIG).[2] Subsequently, Commerce, the U.S. Trade Representative's Office, the State Department, and the FCC also reached a general understanding regarding efforts to open foreign markets. Under this latter agreement, officials of these and other agencies collaborate in preparing for and conducting talks, with lead responsibility assigned on the basis of individual agency knowledge and expertise. This process, which sounds more complicated than it has proven in actual practice, has worked well.

Absent substantial changes in the functions of the various Federal agencies—which I am not recommending—we are always going to be at some disadvantage relative to those of our trading partners which have organized their communications and information policy activities differently. Pluralism is both one of the strengths and weaknesses of our overall Government system, not only in telecommunications but in a number of other fields. Incidentally, when Secretary Baldrige testified before the House Communications Subcommittee in 1983 regarding U.S. communications policymaking, Chairman Wirth noted that the organization of the Government tends to mirror the committee structure of Congress, and that many of the overlapping responsibilities within the Executive branch are likely to persist as long as they last on Capitol Hill.

Fortunately, this is not an area where there are fundamental disagreements among the various Federal agencies regarding our overarching international communications and information policy goals. Any disadvantages due to our present structure, therefore, are not likely to prove decisive.

All of those involved in the process realize that today, more than ever, international communications and information policy have important economic, political, and social implications for our country. There is probably more need for coordinated Government action now than ever before. Our leadership in this field is being challenged. Barriers to American competition abroad, the unilateral opening of our own domestic markets, and the restrictions and regulatory burdens placed on many of our own leading firms persist in having an adverse effect. All of us certainly want to remedy this situation.

CONCLUSION

In conclusion, let me express my thanks to the Subcommittee for giving me this opportunity to testify. I would also like to thank the Members and the expert staff for the consideration and bipartisan support which NTIA has enjoyed over the years. The Administration wants to continue to work effectively with the Subcommittee, and stands ready to provide whatever assistance we can.

U.S. DEPARTMENT OF COMMERCE,
THE ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION,
April 1, 1987.

Hon. DANIEL K. INOUYE,
Chairman, Subcommittee on Communications,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: Enclosed are replies to questions which were asked for the record following the Subcommittee's hearings February 26, 1987 in international telecommunications policy.

If additional information is needed, we would be pleased to provide it.

Sincerely,

ALFRED C. SIKES.

Enclosures.

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[2] The SIG is composed of representatives of the Departments of State, Justice, Defense, and Commerce; the Offices of Management and Budget, Science and Technology Policy, Policy Development, and the U.S. Trade Representative; the National Security Council; the Central Intelligence Agency; the U.S. Information Agency; the Board for International Broadcasting; the Agency for International Development; and the National Aeronautics and Space Administration.

GENERAL

Question 1. "What is the Administration's top priority in the international telecommunications field?"

Answer. International telecommunications and information policy affects a broad range of U.S. economic, technological, commercial, strategic, foreign policy, and other concerns all of which are important. At present, however, opening overseas telecommunications markets by aggressive enforcement of our existing trade laws is a top priority. Improving the ability of U.S.-based telecommunications goods and services providers to compete more effectively both at home and abroad must command priority attention. This entails a number of coordinated steps to reduce overseas barriers to U.S. competition both in industrialized as well as developing country markets. Furthermore, Executive branch agencies are committing significant resources to upcoming international conferences including the World Administrative Radio Conference on Mobile Service (Mobile WARC) scheduled to convene this fall.

Question 2. "Last year, Congress ordered that the key government officials in volved with international telecommunications policy meet regularly. Has this occurred?"

Answer. Yes. Discussions take place regularly and address a broad range of topics.

Question 3. "I understand the State Department is trying to make better use of its personnel in embassies overseas to gather intelligence about telecommunications, and I want to urge them to continue to do this. Is it also possible to use foreign commercial service officers to assist in this intelligence gathering?"

Answer. Yes. Foreign Commercial Service Officers already play a significant role in identifying potential U.S. telecommunications export opportunities and facilitating efforts by U.S.-based firms to compete in overseas markets.

TRADE

Question 1. "We are now involved with the GATT process and have succeeded in adding trade in services to the agenda. We are also involved in preparing for the upcoming WATTC conference on telephone regulations. How do these two meetings connect? Are there any other telecommunications meetings that also address the same issues?"

Answer. The International Telecommunication Union's (ITU) World Administrative Conference on Telegraph and Telephone (WATTC) will convene in 1988 and address the need for revised international regulations governing communications common carrier and related services. A significant U.S. interest is ensuring international regulations reflect the increasing diversity and competitiveness of telecommunications offerings. Discussions under the auspices of the General Agreement on Tariffs and Trade (GATT) involve the commercial terms and conditions under which service providers operate. A primary focus of WATTC is technical matters involving the interoperability of communications systems. A primary focus of the GATT discussions is service trade facilitated by such interoperable systems. The WATTC will focus on regulatory considerations; the GATT will focus chiefly on trade issues.

International trade in services is also addressed by the Organization for Economic Cooperation and Development's (OECD) Committee on Information, Computers, and Communications Policy (ICCP). The OEDC Trade Committee has requested ICCP to examine application of trade principles to the telecommunications, information, and computer services sectors. ICCP findings or recommendations have less legal effect than results reached in the WATTC or GATT forums.

ITU

Question 1. "The ITU has often been described as a technical forum to establish international standards. Is it now becoming more of a trade forum?"

Answer. ITU decisions have always had significant commercial ramifications. Determinations regarding the amount of radio spectrum allocated to a given service, and the terms and conditions governing such allocations, for example, set the commercial parameters within which equipment suppliers function. Determinations by the ITU have a direct and immediate impact on the pace of technological developments, and hence the ability of firms to compete in world equipment markets. In view of the importance accorded trade concerns both here and abroad, the commercial implications of ITU decisions are attracting increased attention. The ITU, however, remains primarily a technical, not trade, forum.

Question 2. "What is the status of the Administration's preparations for the WATTC? What will be the position of the U.S., and what are our objectives? When will a Chairman be named?"

Answer. The 1984 Plenary of the International Consultative Committee on Telephone and Telegraph (CCITT) established a Preparatory Committee to prepare draft regulations to be considered at the 1988 World Administrative Telephone and Telegraph Conference. Study Group B of the U.S. National Committee for the CCITT has been the principal entity for WATTC preparation and the ITU Preparatory Committee is now preparing for an April meeting in Geneva.

The United States has not yet developed final positions for presentation to the WATTC. In general, however, the United States will seek revisions in CCITT regulations that reflect the increasing competitiveness of international communications services and the need for flexibility to ensure future efficient development of new service options. The United States will seek to ensure that any new regulations: (a) do not adversely affect corporate and other private international communications networks; (b) do not impede efficient development of services (including enhanced services) that are not now regulated as common carrier services in the United States; (c) do not require or encourage administrations to establish authorization mechanisms applicable to users of international communications; and (d) do not envision applying mandatory charging and accounting principles to noncommon carrier international communications services.

A timeframe for selecting a U.S. WATTC delegation chairman has not yet been announded. We expect, however, that the matter of selecting a U.S. chairman will be given more attention following the April 1987 U.S. CCITT study group meeting discussed above.

Question 3. "A few years ago, the Commerce Department released a report evaluating the ITU. One of the issues raised in this report was whether we should use means other than the ITU to resolve international telephone concerns. Does the Commerce Department believe this to be a realistic option?"

Answer. At present, the ITU is the most effective international entity for maintaining necessary international cooperation in the use of the radio frequency spectrum, and ensuring the interoperability of international communications common carrier networks and services. Should the effectiveness of the ITU be impaired in the future, the United States would consider again whether alternative means of accomplishing necessary international coordination are feasible and desirable.

INTELSAT

Question 1. "There has been much in the news over the past several months about the alleged wrongdoing at Intelsat by the Director General and the Deputy Director. What has the U.S. been doing in regard to these problems at Intelsat to ensure that our interests are protected?"

Answer. The Intelsat Board of Governors has directed improved financial and other controls in order to minimize any recurrence of irregularities. The United States through Comsat, the U.S. Signatory, has strongly supported such reforms. At present, the actions of Intelsat's former Director General and Deputy Director General are being investigated by the U.S. Attorney for the District of Columbia. Intelsat has retained outside counsel to conduct a thorough investigation of its own. The United States is committed to maintaining an economically sound and effective Intelsat and believes the steps taken to date are fully adequate to safeguard U.S. interests.

Question 2. "What is the status of the PanAmSat consultation, and how did the U.S. fare on the consideration of economic harm to the Intelsat system?"

Answer. An Extraordinary Assembly of Intelsat Parties will convene in Washington on April 1-3 and is expected to ratify earlier action by the Intelsat Board of Governors and Executive Organ which found that use of five PanAmSat transponders for service between the United States and Peru would not have a significant adverse effect on Intelsat. The Intelsat Board action was substantially along the lines of the position urged by the United States Signatory, Comsat, as instructed by the Government. We believe the Assembly will approve that action.

Question 3. "The U.S. adoption of is pro-competitive alternative satellite policy has caused many to question our commitment to Intelsat. What does the U.S. see as the future of Intelsat?"

Answer. In February 1985 the Executive branch published a "White Paper" which: (a) sets forth the grounds for the President's "separate satellites" policy (Presidential Determination No. 85-2 of Nov. 28, 1984, 49 Fed. Reg. 46937 (Nov. 30, 1984)); and (b) makes clear the continuing strong support of the United States for the Intelsat system. Subsequently the United States has emphasized that continuing strong support in discussions with Intelsat Signatories and Parties. The United States continues to support Intelsat as strongly now as in the past.

Intelsat today faces actual and potential competition from a number of satellite and submarine cable communications facilities. These include "regional" satellite systems such as Eutelsat, Arabsat, and the Indonesia-based Palapa system, and new transoceanic fiber optic cables. We believe, however, that Intelsat has the ability to function efficiently notwithstanding this increasing competition and, under the new leadership of Director General-designate Dean Burch, will continue as an important player in the international communications marketplace.

INMARSAT

Question 1. "I have read with great interest recent speeches by the Director General of Inmarsat, Olof Lundberg. He talks about the need for Inmarsat to control aeronautical and mobile services provided by satellite. Should Inmarsat have a monopoly in the provision of these services? Is the U.S. going to sign the Inmarsat agreement to permit Inmarsat to offer these services? How will Inmarsat's entry into this area affect our position at the upcoming Mobile WARC?"

Answer. The United States would not support extension of an Inmarsat monopoly over maritime communications services to encompass other classes of communications service. No final decision has been made regarding whether or when the United States may sign the proposed further agreement broadening the scope of Inmarsat's operations. Inmarsat's possible entry into providing new satellite-based mobile services is a factor that will be taken into account as we develop the U.S. position for presentation at this fall's Mobile World Administrative Radio Conference. Some of the changes which we will urge, however, are desirable independent of whatever actions Inmarsat may take.

Question 2. "I understand that Inmarsat has engaged in talk directly with the European aeronautical communications provider. Yet, similar talks have not yet occurred with the U.S. provider, ARINC. What are your views about whether such direct discussions should occur?"

Answer. We have no views on the extent to which SITA, the principal European aeronautical communications provider, or its individual members should have direct discussions with Inmarsat. In the United States, Comsat is the U.S. Signatory to Inmarsat. As Signatory, Comsat is responsible to present U.S. views and requirements to Inmarsat under existing rules.

If rules governing Comsat's participation in Inmarsat are changed, direct discussions between ARINC, the principal U.S. aeronautical communications provider, and Inmarsat may be appropriate. The National Telecommunications and Information Administration is on record as favoring direct cost-based access to the Intelsat system on the part of U.S. carriers and users in addition to Comsat, and believes the same approach is desirable in the case of Inmarsat. The FCC has not yet altered its rules to facilitate such direct cost-based dealing, however. The issue of such expanded access to both Intelsat and Inmarsat continues to be reviewed by the FCC.

COMSAT

Question 1. "It is now 25 years since we passed the Communications Satellite Act creating Comsat. Since then, satellite technology has changed greatly, competition has come to communications, Comsat has diversified, and now the FCC is considering whether to permit Comsat and Contel to merge. In light of all these changes, do you believe it is now time to review the 1962 Act, as well as the 1978 Act, to determine if these laws best serve the interests of the U.S.? I also wonder whether it is also time to review the over 50 year old Cable Landing License Act."

Answer. The issue of possible revisions in the Comsat and Inmarsat laws is now under review within the Executive branch. If it is determined that changes in present law are warranted, appropriate recommendations will be made. The Executive has not yet undertaken a systematic review of the Cable Landing Act. If there were to be significant changes recommended in present laws governing international communications via satellite, appropriate changes in the laws governing international communications via submarine cable probably would be recommended as well.

Senator INOUYE. Thank you very much, Mr. Secretary.

Our final witness on this panel represents the Bureau of Communications and Information, Department of State, Ambassador Diana Lady Dougan.

Ambassador.

Ambassador DOUGLAS. Thank you, Mr. Chairman. It's always a mixed blessing being the last member of a panel to speak, because the first thing you want to say is that each of the previous witnesses have covered so many of the key points.

But I think you're seeing a theme here, and I was especially appreciative of your initial comments which covered two points which highlight the overall complexity of the issue and why we welcome Congressional attention.

And they are, that the old telecommunications order is changing, and as you also stated, the international organizations must also change to meet the challenges of change.

Three points are important for us to keep in mind as you get deeper into the subject of international communications and information policy. First, it is a very high foreign policy priority for the Department of State.

Second, the merging of the technologies, and the diverse interests within U.S. government and industry, have added considerably to the complexity of this area.

For example, the merging of the information and data processing computer-based information industries and the telecommunications industries, have greatly expanded the scope of industry.

The third point involves a marked change in perspective. Traditionally, when we looked at telecommunications, we thought more about the carriers and the equipment industry. I would suggest strongly that in our overall examination of this area we look very much at the users of telecommunications services, both here and abroad, as one of the other driving forces.

In addition to the economic interests that are being focused on in this committee here today, it is also a very important political and strategic priority of the U.S. government. This is dramatized by the fact that the Department of Defense is the world's single largest user of commercial telecommunications services and thus an important part of the user community of telecommunications.

In my extensive written statement, I have covered not only the goals and priorities of the Department of State in this area, but also our bilateral and multilateral initiatives. I would like to take just a moment to talk about one of the multilateral forums. The International Telecommunication Union is an organization that not only predates the UN by some 75 years but is one of those international organizations that if it didn't exist, we would have to invent.

The decisions made in the ITU directly affect U.S. industry; they directly affect U.S. interests. Thus, we are putting increasing priority on our preparations and our activities within the International Telecommunication Union, and increasing the interest and involvement of U.S. industry as well as the different parts of government.

Chairman Fowler of the FCC referred to the World Administrative Telephone and Telegraph conference that is coming up next year. This is a good example of a conference that directly affects U.S. interests because this is the first conference in this area since the merging I referred to earlier of computer and broadcast and telecommunications interests. This will be the first major conference dealing not only with the different regulatory approach that we have here in the United States as contrasted with the monopoly

approach in many countries abroad, but also in which a traditionally unregulated industry, the information industry, will be caught up in the technology and the regulations of the telecommunications industry.

Our goals are very simple: to maintain the flexibility necessary for the information industry to continue to grow in as unregulated a fashion as possible while providing enough of a framework so that the telecommunications industry can also expand in an orderly fashion.

In each of these conferences, we have also conflicts here at home in terms of the disparate industry interests and the different priorities and goals within government.

We are constantly working not only here at home in our coordination efforts, we have also substantially increased the capabilities of our posts abroad. We have established an informal telecommunications attache program where we have a designated officer at every single embassy abroad to deal with the policy issues, the government regimes, and advancing U.S. interests in those countries. We believe that will be an important underpinning of both our bilateral and multilateral activities.

The watchword that I think every person on this panel is talking about is flexibility. We need the flexibility to be able to compete. We need the flexibility to be able to support the technology. And we need the flexibility to support the free flow of information and ideas, which are our primary foreign policy goal.

Thank you.

[The statement follows:]

STATEMENT OF AMBASSADOR DIANA LADY DOUGAN, COORDINATOR AND DIRECTOR, BUREAU OF INTERNATIONAL COMMUNICATIONS AND INFORMATION POLICY, DEPARTMENT OF STATE

International communications and information policy is an increasingly important foreign policy priority which can advance the economic, political and national security interests of the United States. Telecommunications is not just a foreign policy issue, a domestic issue, a trade issue, a technology issue or an issue critical to national defense. It is all of these and more. Thus, I particularly appreciate your Committee's interest and welcome the opportunity to provide an overview of the Department of State's goals, priorities and initiatives in this policy area.

Telecommunications cuts across so many areas of crucial U.S. interest that a cooperative effort by agencies of the federal government and the private sector is and must be the base on which U.S. policies are developed and implemented. The establishment of the U.S. Coordinator's Office and the Bureau for International Communications and Information Policy is dedicated to forwarding this process.

Our foreign policy goals are built on the overriding philosophical belief in an open marketplace worldwide, both for ideas and for competition in goods and services. In consultation with other elements of the State Department and other government agencies, we vigorously pursue initiatives with our principal allies and with countries of the developing world to further the liberalization of telecommunications regimes and policies worldwide. Our efforts in telecommunications are concentrated in bilateral and multilateral forums.

In the bilateral context the Department puts emphasis on establishing a stronger policy relationship with countries of the Second and Third Worlds as well as telecommunications policy bilaterals with major countries and supporting the telecommunications trade bilaterals led by USTR and the Department of Commerce.

One of our major initiatives is the development of an informal telecommunications attache program with a designated telecommunications policy officer at every embassy. With this program we have substantially improved the ability of our posts around the world to help coordinate our bilateral activities. Their in-depth reporting and involvement in communications issues is already paying dividends in our bilat-

eral follow-up and our efforts to insure that important communications issues are considered in the dialogue among nations.

In multilateral affairs, our major priorities are the International Telecommunication Union and the multinational providers of global communications services, INTELSAT and INMARSAT.

As in all forums our Bureau's activities are guided by our basis goals of promoting an environment in which ideas and information can flow more freely among nations; supporting the growth of international commerce through efficient and innovative use of communications technology; and wherever possible minimizing the amount of direct government involvement and regulation.

The ITU is the world's premier organization for promoting the rational management of international telecommunications.

Since our Bureau is specifically responsible for representing the United States in this organization, we devote a large part of our Bureau resources to the myriad of negotiations in the ITU, including coordinating the extensive work of other federal agencies and the private sector. Major technical contributions from NTIA, FCC, DOD and NASA, among others are extremely important to our effectiveness in this major forum. Above all contributions of private sector experts are the key to our success.

Our current activities and my priorities concerning the ITU lie in four areas:

First we are working with other key countries to shape ITU policies which promote innovation as well as efficiency in telecommunications and broadcasting services. We place special emphasis on the 1989 Plenipotentiary Conference which will undertake a full review of the overall ITU structure;

Second, we are building up U.S. industry involvement in the consultative committees of the ITU to insure effective representation of diverse U.S. industry interests as well as expertise, especially in the area of standard setting which directly affects U.S. abilities to compete in the international marketplace;

Third, we are accelerating our preparations for the World Administrative Telegraph and Telephone Conference which will in large measure determine the future regulatory framework for the information technology industry as well as telecommunications abroad. Further it will do much to set the groundwork for the new round of the GATT involving trade in services;

Fourth, on a continuous basis we are overseeing the preparations and negotiations for major World Administrative Conferences such as the HF, Mobile, and Space WARCs;

The second major area of our Bureau's multilateral responsibilities is that of international telecommunications facilities. In carrying out our responsibilities for U.S. relations with INTELSAT and INMARSAT and for issuing the U.S. government policy instructions to the U.S. Signatory (COMSAT) to these organizations, the Bureau, along with the FCC and NTIA, has devoted a great deal of attention to promoting U.S. policy objectives of supporting INTELSAT and INMARSAT and at the same time nurturing limited competition with these traditional global satellite monopolies.

In INTELSAT, my focus early in my tenure was on promoting the provision of transborder communications services via U.S. domestic satellites. Over the last two and one half years we have successfully consulted some 19 U.S. domestic satellites with INTELSAT for service to over 20 Caribbean nations, resulting in more cost-effective and diverse communications for our neighbors—reinforcing their economic and political ties to the United States. For the last several years, we also have been promoting other non-INTELSAT services, and we are now completing the consultation with INTELSAT of PanAmSat, the first satellite system authorized under the U.S. separate systems policy. At the present time, we are actively campaigning to elect an outstanding American leader in communications, Dean Burch, as the next INTELSAT Director General. In the INTELSAT area, our current policy priorities are:

To ensure the intent of the 1962 Communications Satellite Act is met in the present and future development of INTELSAT;

To develop, through research contracts and analysis of overseas post reports, a better understanding of the impacts and benefits of competitive international satellite systems;

To chart a future course for INTELSAT that will ensure its viability and will simultaneously promote other U.S. policy objectives.

In INMARSAT, we supported the adoption of amendments to the INMARSAT Convention that would allow INMARSAT to offer aeronautical services in addition to their maritime services, and we are now working with the FCC and NTIA to resolve the policy and regulatory issues related to the structure of the U.S. participa-

tion in the provision of aeronautical services via INMARSAT. In the INMARSAT area, our current priorities are:

To ensure the intent of the 1978 International Maritime Satellite Communications Act continues to be met as INMARSAT moves into the provision of non-maritime satellite services;

To promote the availability of a variety of inter-operable service providers for all mobile-type satellite services (e.g., maritime, aeronautical, land, navigation) via INMARSAT and national satellite systems.

There are also other multilateral forums in which we have some degree of involvement such as the OECD, ISO and WIPO. Our work in the OECD is in large measure directed towards developng analysis and strategies which will contibute to the broader initiatives launched at Punte del Este to encompass trade in services in the next round of the GATT.

In conjunction with the Bureau of Economic and Business Affairs which has primary trade responsibility for the Department, we are working with USTR, the FCC, Commerce and others to coordinate the work done on telecommunications policy in the ITU and OECD with the trade policy work in U.S. preparations for the next GATT round.

Finally, among our concerns, is telecommunications development. We do not pretend to have solutions, but we are asking some hard questions: Such as, how U.S. business can be better positioned to develop the Third World markets for telecommunications goods and services; how do we work more effectively to gain LDC's adoption of more pragmatic policies in the promotion of their own domestic telecommunications services; and how do we domonstrate to LDCs that their economic interest will also be served by international flexibility?

BILATERAL RELATIONS

In contrast to a situation which existed four years ago, the Department of State is today broadly engaged in bilaterals on telecommunications matters around the world. This bilateral activity takes many forms, but can be divided into two general categories: formal bilateral consultations and the ongoing initiatives of our diplomatic and consular missions.

Comprehensive bilateral discussions with our principal allies on the wide range of international communications and information issues has been a useful mechanism for building understanding and clarifying positions. Historically, the USG dealt almost solely with the Ministries of Posts and Telecommunications on communication matters. Thus one of the main purposes of our bilateral discussions has been to stimulate involvement of senior policy-level officials in other countries beyond the traditionally parochial interests of the PTT's. We have systematically expanded the bilateral dialogue to include foreign affairs, economic, trade, and industry representtives, as well as relevant PTT and other communications officials. Our own delegations have also included diverse agency representation.

Starting in 1983, we commenced formal bilaterals with major industrialized countries and have now held the third in our series with the United Kingdom. We are now placing emphasis on newly industrialized countries, including most recently, the first comprehensive policy talks in this area with the Peoples Republic of China.

Our Bureau also devotes considerable resources in providing both departmental and embassy expertise for the MAFF and other trade related talks led by USTR and the Department of Commerce.

U.S. DIPLOMATIC MISSION ACTIVITIES

With the merging of computer and telecommunications technology, issues of information policy have become one of the major areas of international relations. It is thus essential that we bring a sophisticated understanding of telecommunications to our dealings with nations around the world.

Thus an early priority of our bilateral efforts has been to systematically build expertise in our posts abroad. It continues to be one of my top priorities. The focal point is our telecommunications attache program which we launched last year. Our program is geared to train Embassy specialists in: a) understanding the issues; b) assessing the host country perspectives and concerns; c) effectively representing and advocating U.S. objectives.

Because telecommunications policy is a relatively new subject for the Foreign Service, we concentrated initially on what we determined to be the fourteen key posts abroad for telecommunications: London; Paris; Bonn; Rome; Ottawa; U.S. Mission to the European Community, Brussels; U.S. Mission to the OECD, Paris; U.S.

Mission to the U.N., Geneva; Tokyo; Beijing; New Delhi; Nairobi; Mexico City and Brasilia. We then created fourteen instant "telecommunications attaches."

These officers not only went back to their posts with an expanded knowledge of the issues, activities and U.S. goals, but they also contributed their own perspectives on dealing with the various players and issues in host countries. Our Telecom Attache Conference also provided U.S. industry and other government agencies with an opportunity to establish closer relationships with these key posts. We have since institutionalized a number of ongoing activities to build on this initial training and have developed a directory of the primary officers with designated responsibility for telecommunications issues in all posts. We have shared this with U.S. industry groups as well.

Although this is a modest beginning, for the first time, an American businessman or government official with telecommunications concerns can contact an identified post intermediary for assistance in understanding telecommunications policy, issues, players, U.S. objectives, and how they are viewed from the other side. And USG delegations have a more formal mechanism for coordination and follow-up to their bilateral initiatives. I believe this can be one of the most effective tools of coordinating U.S. policies.

We are already getting a direct return on our modest investment. This combination of formal bilateral consultations and ongoing work with our missions abroad has resulted in demonstrably better understanding and support for U.S. positions in international fora and greater comprehension of the relevance of telecommunications matters to international trade negotiations, and our deregulatory policies, contributing to the more favorable climate abroad for greater liberalization in the telecommunications area.

THE INTERNATIONAL TELECOMMUNICATION UNION

As the United Nations specialized agency responsible for telecommunications matters, the ITU is the focal point to maintain and improve telecommunication of all kinds, to promote efficient and useful telecommunication services and to harmonize the actions of members in the attainment of those ends.

The ITU conducts its work through conferences such as WARCS (World Administrative Radio Conferences), and its permanent organs, the Consultative Committee on International Radio (CCIR) and International Telegraph and Telephone (CCITT). The ITU is also the international manager of the radio frequency spectrum and geostationary satellite orbit and telecommunications via telegraph and telephone. Its International Regulations, adopted at the World Administrative Conference have treaty status among ITU members. Thus the United States must actively and aggressively represent and protect its interests in the conferences.

As the ITU Administration under the terms of the International telecommunication Convention, the CIP Bureau serves as the U.S. focal point for ITU matters. The FCC takes responsibility for specific technical matters relating to the registration of radio frequencies, radio interference cases and monitoring activities. Many federal agencies, especially Commerce, USIA, NASA and DOD also have direct interest in the ITU activities. Increasingly however, it is U.S. industry that must conatribute its expertise and energy to this process both as users and providers of telecommunications services. While I would especialy like to pay tribute to the American industry people who have worked with us in the ITU over the years, I also want to express my concern for the future and my hope that private sector involvement will continue to increase. We have a heavy agenda in the ITU over the next two years with must at stake for U.S. industry.

ITU CONFERENCE

The ITU Plenipotentiary.—Preparations are already underway for the 1989 ITU Plenipotentiary Conference. This Conference functions as the supreme organ of the ITU and will review and consider modifications to the basic structure, operation and budget of the ITU. At issue are changes that could significantly affect the internal politics and structure of the organization in ways that may either advance or hinder our ability to pursue U.S. policy goals. At the same time the Conference offers an excellent opportunity to establish the direction and priorities which the United States would like to see the ITU follow in the coming decade.

As part of U.S. preparations, we are undertaking a comprehensive review of the organization, as always, cast against a test of how it serves U.S. interests. One of the central issues is the adoption of a permanent Charter for the ITU which will set the framework of the organization for many years to come. A second is the long

term role of the IFRB, an independent Board which coordinates both frequency and orbital locations.

RADIO CONFERENCES

Radio conferences are one of the most prominent ITU activities. In recent years the conferences have increased in complexity, importance and politicization. Spectrum and orbit issues in particular have become difficult, both technically and politically. They reflect the basic conflict between increasing scarcity of spectrum and the demands of new as well as traditional users.

Regulation of the use of the spectrum-orbit resource has been necessary since the beginning of radio in order to ensure an orderly and interference-free environment for all nations. Since radio waves do not respect borders, the alternative is a cacophony of the airwaves with no one well served and no room for new technologies and services. Needless to say, different nations have diverse priorities and opinions on how these scarce resources should be allocated, used and protected for future generations. An ITU decision directly affects U.S. interests not only in our abilities to operate and promote new technology but also in the ability of U.S. firms to improve their competitive positions in or create new markets abroad.

For these reasons, the Department views the ITU radio conferences as top priorities and works very closely with NTIA, FCC, NASA, DOD, USIA and other agencies and the private sector in our national preparatory activities. The CIP Bureau manages and oversees U.S. preparations for and participation in the various conferences. As U.S. Coordinator I have institutionalized a number of mechanisms to improve U.S. delegation effectiveness, including the appointment of full-time Executive Directors for major conferences, engaging our posts abroad extensively, early designation of Delegation Chairman, and establishment of a home team approach to assist us in instructions to our delegation.

HF Broadcast WARC.—The high frequency broadcast conference is currently underway in Geneva. Because international broadcasting is dependent upon the HF bands, this conference goes to the heart of our foreign policy goal of promoting the freest possible sources of information and ideas. The conference was called by developing countries to establish a frequency assignment approach to the high frequency (short wave radio) bands. These frequencies are a principal form of broadcast communications in developing countries and the only currently viable means of public international broadcasting. Both of these uses are putting substantially increased demands on an already crowded resource. Soviet jamming has also added substantially to the burden.

While the issues are technical, they are also exceedingly political. The frequency assignment methods adopted by the conference will largely determine the international rules under which our international broadcasters—the Voice of America. Radio Free Europe/Radio Liberty and private FCC licensees—must operate to communicate throughout the world. Soviet jamming of U.S. and other Western broadcasts, insufficient frequency allocations and rapidly expanding requirements are significant factors in the deliberations. We are fortunate to have again put together a strong delegation and recruited Leonard Marks, former head of USIA to head it up.

Mobile Services WARC.—Mobile radio holds the promise of many new applications and services using new technologies. At stake for U.S. industry in particular are maritime, aeronautical and land mobile radio service applications. The Mobile WARC will review and revise the ITU Radio Regulations affecting these and will consider in particular, new provisions for the global maritime distress and safety system (GMDSS), frequency allocations for the mobile satellite (MSS), radiodetermination satellite (RDSS) services, and high frequency maritime radio communications.

The major issues regarding GMDSS is the opposition of some nations to the cost of fitting ships with automated equipment and their concerns over a possible loss of maritime industry jobs. The U.S. support of GMDSS involves extensive consensus building and consideration for developing country concerns.

RDSS is a satellite-based radio service designed to provide positioning information which has already been approved domestically by the FCC. The proposed systems are capable of low-cost accurate location information for individuals, vehicles, or any potential user. The major RDSS issue at the conference is the international allocation of suitable frequency bands to accommodate this new service, prefereably on a global basis. Opposition to U.S. proposals comes from existing spectrum users, which may be required to move to other portions of the spectrum. Some countries fear competition to INMARSAT whose convention would permit the organization to provide RDSS service.

The provision of suitable frequency allocations for the various mobile satellite services will undoubtedly be the most difficult and contentious issue at the upcoming WARC. The outcome will have a direct effect on the FCC's recent decisions to accommodate land mobile satellite applicants. The FCC has already reallocated spectrum previously dedicated to aeronautical services to provide for a general mobile satellite service, including land, aeronautical and maritime mobile users. Consequently, the U.S. is proposing to change the current ITU allocation to reflect that approach.

In keeping with our continued commitment to involve U.S. industry leadership in the ITU process, we have David Markey, Vice President of BellSouth, chairing our delegation, and he and our Executive Director have already completed several rounds of intensive bilaterals as an important part of our conference preparations.

Space WARC.—The second session of Space World Administrative Radio Conference will convene in the summer of 1988. At the first session in 1985, we were successful in limiting international regulations to the fixed satellite services.

At the second session of the WARC we will resist efforts to extend rigid satellite planning to other bands and to undercut the flexibility we believe is imperative to the development of satellite technology. The U.S. favors an allotment planning process that would give nations guaranteed access to a specific section or arc of the geostationary orbit, rather than a fixed location, with the view that this more flexible arrangement will better accommodate needs in the future.

Our Bureau is working actively with NTIA, FCC, NASA and others to develop proposals which will achieve our objectives of ensuring that U.S. satellite requirements are accommodated with a minimum of restrictions, that maximum flexibility in implementing systems is retained, and that procedures are practicable and workable. The Department will soon be setting up a formal WARC delegation management team to insure coordination and oversight as we pull the various positions and interests together.

WATTC

In addition to radio related matters I have outlined, the ITU does a great amount of work on telecommunications networks and services issues, i.e., particularly the development of an international regulatory framework and the development of telecommunications standards. An important challenge for the ITU in this area is the upcoming World Administrative Telegraph and Telephone Conference (WATTC) to be held in 1988.

The importance of the Conference is clear. Discussion on the proposed revisions will serve as a forum for a clash between the U.S. regulatory philosophy and other nations regulatory philosophies and will highlight the markedly different telecommunications environments.

As part of our overall preparations for the WATTC, we have convened an advisory body made up of diverse expertise and interests to sort through the conflicts. We are working toward a consensus on several key points as the framework for the U.S. policy objectives at this conference. These are:

ITU regulations which are flexible and allow for existing and future telecommunications requirements;

ITU regulations which do not include detailed technical, operating, and tariff provisions as these are the appropriate subject of non-binding CCITT Recommendations;

ITU regulations which cover only entities providing public international telecommunications services (not to include data processing activities); and

ITU regulations which accommodate various regulatory philosophies.

We intend to do our best to work toward ITU regulations that are minimal and flexible, and as such, promote customer choice and allow for the benefits of new technology, and to utilize other forums, such as OCED and GATT, to further promote these goals.

STANDARD SETTING

Standard setting is also an important ITU function. In telecommunications we must continually strike a balance between using standards to establish a basic technology or interface, and maintaining the flexibility we believe is required to promote the development of new and innovative technology. Our approach is to rely, whenever possible, on voluntary industry standards rather than government dictates.

Fortunately, the ITU standard setting process for the most part has been very effective and apolitical. With the merging of computer based and other information

technologies with telecommunications and broadcast technologies, and the associated economic stakes and competing interests regarding these topics; the effectiveness of the ITU will be tested.

Most of the international standard setting takes place in the consultative committees of the ITU: the CCITT and CCIR. The CCITT is responsible for developing the international recommendations (standards) for telecom equipment, network interconnection, service definitions and associated tariff principles. The CCIR studies and issues recommendations on technical and operating questions relating specifically to radiocommunications.

Since the CCITT and the CCIR are components of the ITU, their activities fall under U.S. treaty obligations included in the Convention and its Administrative Regulations. As the focal point for ITU activities, our Bureau provides not only the official leadership for our negotiations abroad but Bureau officers chair the formal U.S. Advisory Committees set up to develop, coordinate and recommend national contributions and positions to the Department. Membership is open and encouraged. I might add we have been encouraging our European colleagues to take a similarily more open approach since many European and Japanese companies regulatory participate in our process.

We strongly encourage a more open approach generally in coordinating positions. It is imperative that the Department not operate in isolation but fully engage the technical expertise and judgment of U.S. industry as well as other federal agencies for support, guidance and leadership. Thus, in any given month we organize and coordinate more than a dozen working group meetings for the CCIs alone.

The CCITT.—The ability of U.S. firms to compete in foreign telecommunications equipment and services markets is affected directly by the work of the CCITT. With this in mind, the U.S. has pursued a number of broad principles in its CCITT work: 1) a focus on network interconnection to ensure access and global interconnection; 2) flexibility in technical standards to permit greatest customer choice; and 3) less regulation and greater scope for private initiative and entreprenureship.

The U.S. has had excellent success in the CCITT in advancing these goals, despite operating in an environment where national telecommunications monopolies often predominate. It is imperative that we maintain the concept that CCITT Recommendations are just that, and remain subject to a certain amount of national discretion and bilateral agreement.

Current issues within the CCITT are: the continuing consideration of tariff principles governing private leased lines, the use of personal computers in network operations, the evolving digital network, Integrated Services Digital Network (ISDN), and various other technical considerations affecting network operations and new technologies such as videotex, message handling, and international credit card standards.

One example of a significant achievement is our success in gaining U.S. industry consensus, and subsequent adoption of an international telephone credit card standard. Through our initiative in getting this accepted standard internationally, U.S. industry calculates it will save over $100 million annually.

An important component of U.S. policy is resisting any attempt to add volume sensitive tariffing to the existing Recommendations. Specifically, tariffing principles for leased and private lines directly affects U.S. competition in value added services. Volume sensitive pricing or interconnection restrictions constitute barriers to entry for various U.S. suppliers seeking to compete overseas. The Europeans believe that liberal use of leased lines, particularly when tariffed on a flat-rate basis, will encourage the bypassing of the public network.

Another important issue is ISDN—the concept of a single digital pipe through which all telecommunications services will be offered and transported. The concept has obvious efficiencies both for long-term cost reductions associated with network operations, and as means to give more choice in the hands of telecommunications users. We have very real concerns, however, on the cost of implementation, and the potential for expanding monopoly control over services.

The tension inherent in CCITT work remains between the need for agreement so that international interconnection can continue, and attempts by nations to gain competitive advantage in the area of trade through the standards process. This inherent tension is exacerbated by the strong influence in the CCITT of the European PTTs with their preference for monopoly. In my view this has become an area of growing concern. The recent USTR led discussions with the EC will be a valuable tool in helping us deal with this trend. Our third round of policy bilaterals with the U.K. also provided an opportunity to encourage their more liberalized approaches in the EC and CEPT processes.

THE CCIR

The CCIR is not exactly a mirror image of the CCITT since it deals with all facets of radio communications ranging from satellite transmissions to amateur radio, from research in deep space to radio and television broadcasts. Much of the work is related to the formal ITU Radio Regulations; for example, the CCIR can submit proposals directly to a radio conference if it believes an item is of sufficient impact on the operation of radio systems. Thus it serves as the continual workhorse of the ITU World Administrative Radio Conferences in addition to its ongoing responsibilities to carry out studies and issue recommendations on radio matters.

In addition to the many issues related to radio spectrum allocations and geostationery orbital issues, the CCIR also becomes involved in standard setting in other regards.

An important initiative of our Bureau this past year has been the shepherding of an international standard for high definition television (HDTV). This is an excellent example of how our Bureau likes to approach standard setting matters, so I will take a moment to elaborate.

Almost two years ago, U.S. industry interests under the leadership of Advanced Television Systems Committee (ATSC) approached us informally with their problem. They had come to the conclusion that the adoption of a global standard for HDTV would be in everyone's interest. While many companies both here and abroad had made considerable investments in research of various technologies, they could not come to agreement on major specifications. As you know, television has long been hampered by basically different standards between North America and Europe. Thus any dreams of extending the free flows of ideas and information around the globe through television technology has been technologically as well as politically hampered by incompatability of both production and distribution standards.

With the advent of high definition television, there was an opportunity to resolve some of the differences in the new technologies. This is of crucial importance to traditional U.S. broadcast and film interests, opens important new avenues in scientific, medical and educational broadcasting, and greatly advances cost-efficiency and access.

We were convinced of the principle, but made it clear that we would only lead the charge in Geneva if U.S. industry interests could reach a voluntary concensus. Ultimately, the only technology sufficiently advanced to warrant standard support was developed by the Japanese. We worked with U.S. industry interests for a number of months through our formal CCIR Advisory Committee process and the ATSC group which included representation from the networks, public broadcasting, National Association of Broadcasters (NAB) and others. While our progress in the CCIR has been incremental at best, the groundwork has been laid on a sound technical basis. We will continue to be faced with economic and trade opposition in some corners of Europe, but the acceptance among the engineers is growing and we believe the willingness to go out and make the technology commercially viable is well launched.

THE OECD AND TRADE SERVICES

The Organization for Economic Cooperation and Development (OECD) is in the process of analyzing how trade concepts from the GATT that apply to goods might apply to computer services, computerized information services, and telecommunications. This task has taken on added importance with the decision to include negotiations on services in the upcoming Uruguay trade round. The role of telecommunications will be particularly important in the services negotiations, because it is not only a service sector in its own right, but provides a vital infrastructure for the efficient and competitive provision of many other services, such as tourism and banking services.

In the OECD Committee on Computers, Communications and Information Policy, the United States has promoted an analysis of the telecommunications sector which focuses on the problems of "access to and use of" the telecommunications network. We believe that this analysis will shed light on the trade-distorting effects of excessive telecommunications regulation.

Since telecommunications is a highly regulated sector in many countries, with many regulations designed to meet national social or economic objectives, this is obviously a sensitive and difficult area. We have made clear to the other countries in the OECD that we are not trying to challenge the monopoly provision of basic services, or force other countries into facilities-based competition. Many countries, however, are moving slowly towards permitting services-based competition nationally, particularly in the newer enhanced or value-added services. These services, as well as telecommunications-based information services, will become competitive interna-

tionally, however, only if there is liberalization of current restrictions on use of the telecommunications network.

Our OECD initiatives are also making telecommunications experts more familiar with trade concepts and their implications and trade experts more familiar with the national and international regulatory framework which governs telecommunications. Nowhere is the necessity of the inter-disciplinary approach more evident than with regard to the ITU's upcoming World Administrative Telephone and Telegraph Conference, or WATTC-88, discussed previously. If WATTC were to extend ITU regulations over non-telecommunications services, e.g. data processing, there would be an obvious impact on what could be negotiated in GATT.

Among our current initiatives in the OECD is an in-depth analysis of the economic effects of liberalization in telecommunications in which our private sector has been an active participant. Obviously, there is great concern over the effects of liberalization on employment, and on the ability of telecommunications authorities to continue to meet social goals, such as universal service, in a liberalized environment. The OECD offers a unique and valuable forum to discuss these issues as well. We believe that such a study reflecting diverse industry perspectives will do much to promote the merits of liberalization among government policymakers.

INTERNATIONAL TELECOMMUNICATIONS FACILITIES POLICY

There are a number of key international telecommunications facilities policy issues of importance to the United States. The four that will be at the focus of the Bureau's attention in the coming months are:

The future role of INTELSAT;

The impact and benefits of satellite systems separate from INTELSAT;

COMSAT's Signatory role and the U.S. instructional process;

U.S. goals for INMARSAT and the provision of aeronautical services.

U.S. Goals for INTELSAT.—Nearly twenty-five years ago, with the creation of INTELSAT, the United States sought to achieve two key foreign policy goals: 1) to bring about the development of a global communications network which would serve to promote our policy goal of free flow of ideas and information; and 2) to promote the most efficient and effective global communications satellite system for meeting user requirements.

When INTELSAT was formed, only a few nations had the technology or financial resources to establish a satellite communications system. An international consortium provided the means of spreading the cost and the risk, while at the same time promoting international comity and the development of a satellite manufacturing industry. Today, with dramatic advances in technology and lower costs, it has become possible for many nations—and even individual businesses—to develop satellite networks.

As a consequence, our foreign policy has been increasingly focused on the goal of improving the efficiency, effectiveness and flexibility of INTELSAT to adapt to the opportunities of advancing technology and to meet and accommodate competition from alternative networks—both satellite and undersea cable. To assist us in meeting the difficult policy challenges facing the United States and our fellow INTELSAT member nations, we have initiated bilateral discussions with other governments and signatories to address the issues and chart a course for the future role of INTELSAT.

Separate Satellite Systems.—The Executive Branch and the Federal Communications Commission have devoted substantial time and effort over the past several years to implement the U.S. policy on "separate satellite systems" outside of INTELSAT. This continues to be a focus of U.S. policy. We clearly believe the benefits of diversity and the discipline of the marketplace are the best means of dealing with the balance of network capability and customer demand. Many of the benefits of competition have already been realized by our merely having proposed competition: INTELSAT has already introduced new services and dramatically reduced prices for certain services in both developed and developing countries, and it has sold and leased portions of its excess capacity to meet domestic communications requirements.

To improve our ability to promote the U.S. policy on limited competition, we recently initiated a study on the impact of the U.S. separate systems policy on developing countries. It is clear that separate systems can play a crucial role in meeting many of the communications requirements of developing countries that have not been met by INTELSAT. Likewise, as we move further down the road of implementing the separate systems policy, we will continue to use the assessments of our overseas posts to fine-tune our promotion of the policy.

The Signatory Role and Instructional Process.—The Department of State, following consultation with the Department of Commerce and the FCC, issues instructions to the U.S. Signatory (COMSAT) to the INTELSAT and INMARSAT Organizations. The objective of these instructions is to insure that U.S. national and foreign policy objectives are achieved.

The inception of a State Department observer at the INTELSAT Board of Governor deliberations has improved our ability to identify and deal with U.S. interests beyond those of COMSAT's corporate interests. In expanding this mechanism to include other agencies as appropriate, we have further refined out abilities to deal quickly and effectively with diverse U.S. government interests. Likewise, the U.S. Signatory has, at the government's request, improved the mechanism for ensuring that many INTELSAT documents are made publicly available and that U.S. industry is given an opportunity to comment upon INTELSAT activities. In consultation with the FCC and NTIA, we are working to further refine and improve the instructional process.

The proposed COMSAT/Contel merger provides increased incentives for assuring that the instructional process functions properly. We will be proposing a comprehensive study, to be conducted in close cooperation with Congress, on the appropriate signatory and jurisdictional means of ensuring U.S. leadership in the INTELSAT and INMARSAT organizations.

INMARSAT and Aeronautical Services.—The United States has been a strong supporter and major user of INMARSAT's maritime mobile satellite services. The forty-eight nation international consortium provides a variety of maritime communications services on a global basis, including ship-to-shore telephone, telex, data and video services and communications with off-shore oil rigs. In 1985, INMARSAT proposed to use its network to provide mobile communications in the aeronautical as well as maritime field, and the United States supported the necessary amendments to the INMARSAT Convention. It is also expected that INMARSAT will in the future continue to extend its offerings to include land mobile and navigational services as a natural and efficient extension of its technology and role in providing mobile communications via satellite.

INMARSAT received the approval of its member nations—with the U.S. supporting the proposal—to amend its convention to allow the provision of aeronautical service on a non-exclusive basis. However, the Secretaries of State and Commerce and the Chairman of the FCC are now defendants in legal suits filed to prevent them from taking any actions which would confer upon COMSAT any exclusive authority to provide U.S. domestic access to the INMARSAT aeronautical service.

It is the view of the Department that the United States can ratify the INMARSAT amendments following an interagency agreement on, but prior to a final resolution of, how domestic access to the service might be structured. We intend in our ratification process to include appropriate qualifying language as to the, yet undefined, nature of COMSAT's signatory role regarding aeronautical services. We believe this approach will preserve the domestic regulatory options and at the same time avoid further delay in the introduction of a valuable service and the advancement of technology.

COMMUNICATIONS DEVELOPMENT

Two years ago, the Department convened an interagency task force to do an in-depth review of USG activities and role in telecommunications development. The task force, chaired by AID, came up with several key points. The most significant was the unanimous view that this area should be a higher USG priority from a strategic, economic, and political standpoint as well as traditional humanitarian reasons. The task force identified a surprising breadth of USG involvement in telecom development of some 23 federal agencies which are directly involved in various forms of communications development. Two other key elements of the task force's recommendations to the National Security Council were that future emphasis must center on involving the private sector and there should be a better mechanism for bringing together the activities of AID, DOD, and other key sources of expertise and funding.

In the meantime, we have been concentrating much of our efforts in making sure that the framework for the ITU's Center for Telecommunications Devleopment reflects U.S. policy objectives. Working with our public advisory group, we have been successful in getting the Center for Telecommunications Development to adopt a framework which clearly paves the way for private sector involvement and increased participation in Third World telecommunications development. With its adoption of a focus on pre-competitive and pre-investment activities, we believe the

Center is avoiding the pitfalls of becoming a mini-UN Development Agency or a means of diverting the ITU from its principal activities and priorities. In addition to formal activities such as this, we and other agencies are continuing to work on a number of small but important projects which coordinate and forward our goals.

Consistent with our belief that the private sector should take the lead, our Bureau concentrates its development efforts on private sector initiatives and promotes their involvement in activities such as the United States Telecommunications Training Institute as well as the ITU's new Center for Telecommunications Development.

Of particular interest to members of this Committee has been the Pacific Basin PEACESAT system. For some time we have been working to coordinate the interests of the island nations of the Pacific to renew satellite services to this isolated and far flung part of the world. Working with the Departments of the Navy, Commerce, Interior and congressional interests, we believe we are well on the road to restoring much needed communications, health and information services to this strategic part of the globe.

While the substantial cutbacks in the Agency for International Development activities in telecommunications may be discouraging to some, it is noteworthy that its two major projects in the Caribbean and Africa are being continued and funded by the local governments. I think this is the highest kind of compliment to a development project.

One of the most successful new programs is the Department's Trade and Development Program (TDP) which finances feasibility studies and other planning services for large-scale capital-intensive development, primarily in the more advanced LDC's where a viable export market for U.S. industry has the most potential. TDP's activities in telecommunications have risen from less than 1% of its modest budget in 1980 to over 30% in 1986. Much of this increased activity has been in those countries where policy makers have recognized that telecommunications can generate substantial revenues and much-needed foreign exchange when new approaches are taken. The TPD program's ability to promote this concept and pave the way for more U.S. private sector involvement, is in my view one of our most effective USG initiatives in telecommunications development.

We believe a good case can be made for more U.S. industry involvement in Third World markets notwithstanding the obvious impediments of financing, closed and limited markets and regressive tariff and planning practices. Historically, U.S. development assistance has improved overall U.S. exports, directly through the introduction of U.S. equipment and services, as well as indirectly through the adoption of U.S. technical standards and management patterns. On the other hand both we and developing countries must be more realistic about the problems.

In addition to the possibly unrealistic expectations of some developing countries on how much direct assistance we can make, there are also very real U.S. industry problems. With the current emphasis on U.S. competitiveness in protecting our own domestic market and getting a fair shake in other industrialized countries, it is difficult to get U.S. industry enthused about the seemingly marginal markets of the developing countries.

Even more intransigent obstacles to Third World development in telecommunications are the funding limitations and policies that are still the reality in most developing nations. These policies are founded on and tend to maintain the PTT monopoly as a highly controlled source of general treasury funds and governmental power instead of a tool for the promotion of economic growth. While most developing countries would prefer large scale concessional financing on a government-to-government basis, many donors—the U.S. included—question whether this would be an effective use of funds, even if there were not a severe shortage of concessional financing available. In any case, we look to the private sectors to play a major role. We believe their involvement can best maintain the long-term presence and pragmatism of U.S. interests.

Clearly, more could be done by the private sector to position itself to become more active in Third World development in telecommunications goods and services. I believe that more thought should be given to constructing the appropriate role for government in enhancing and more sharply focusing such an effort. The degree to which we are involved in telecommunications development is directly related to our ability to promote domestic and international telecommunications policies in the Third World that are consistent with U.S. interests as well as mutually advantageous. The Third World, as our major competitors well know, represents a potentially vast market for telecommunications products and services, and American expertise should be there.

CONCLUSION

To conclude, I would like again to express my thanks to the Committee for its interest in and thoughtful attention to this critical policy area. In my testimony I have provided an extensive review of the Department's policy goals, the major issues and our objectives for dealing with them. I have emphasized the economic dimensions of these issues because they are of special interest to the Committee and of increasingly critical importance. The challenges and opportunities in this policy area are vital to our nation's future and we especially look forward to working with you and other members of the Congress in this area in the future.

[The following information was subsequently received for the record:]

QUESTIONS OF SENATOR INOUYE AND THE ANSWERS

Question. What is the Administration's top priority in the international telecommunications field?

Answer. The overall priority of the Administration is to promote global economic growth and to extend democratic values through the development of flexible and open international telecommunications regulations, facilities and services.

Within this context, the top priorities of the Bureau of International Communications and Information Policy and the U.S. Coordinator have been outlined extensively in Ambassador Dougan's written testimony. In both bilateral undertakings and international organizations such as the ITU, INTELSAT, INMARSAT, OECD, etc., the U.S. Coordinator is working with the diverse U.S. interests and the private sector to build an international framework which promotes innovation, efficiency, and access to telecommunications and broadcasting services.

Question. We are now involved with the GATT process and have succeeded in adding "trade in services" to the agenda. We are also involved in preparing for the upcoming WATTC conference on telephone regulations. How do these two meetings connect? Are there any other international telecommunications meetings that also address the same issues?

Answer. The GATT Negotiating Group on Services has begun its work on the development of a broad Framework Agreement on Trade in Services, and at a later stage will turn to sector specific understandings. Many in the U.S. business community would like telecommunications and information services to be candidates for consideration. Telecommunications is also important in other services sectors because it provides a vital infrastructure for the efficient and competitive provision of many other services, such as tourism and banking.

The U.S. goal in GATT is to strengthen and improve the multilateral trading system, and to improve the abilities of U.S. industry to compete.

The United States seeks a similar objective in the ITU's 1988 WATTC. While these latter discussions will not be focused on the framework of trade, the effects of new international telecommunications regulations will affect our future trading flexibility. For example, if WATTC were to extend ITU regulations to cover non-telecommunications services, e.g., data processing, there would be an obvious effect on what could be negotiated in GATT.

Within the ITU, the work of the CCIT is also critical for ensuring a competitive envirionment for telecommunications services, for this is where service definitions, service standards, and the associated tariff principles are developed.

We are also encouraging examination of telecommunications services in the OECD since many of the issues are economic as well as technical in scope. The GATT process will rely on the OECD groundwork analyzing how trade concepts that apply to goods might apply to computer services, computerized information services, and telecommunications. This will also provide important groundwork for our GATT negotiators.

Question. The ITU has often been described as a technical forum to establish international standards. Is it now becoming more a trade forum?

Answer. No.

While the implictions of standards for trade are considerable and the focus of U.S. participation in the ITU will continue to take this into account, the questions addressed by the ITU have been and will remain primarily technical in nature. The economic significance of technical matters is already an inherent characteristic of the CCITT process, particularly as it relates to tariff principles.

Question. What is the status of the Administration's preparations for the WATTC? What will be the position of the United States, and what are our objectives? When will a Chairman be named?

Answer. The United States has been actively preparing for the World Administrative Telegraph and Telephone Conference since December of 1984. At that time the Bureau established within its U.S. CCITT Federal Advisory Committee a study group to do the groundwork for the WATTC, and to encompass the CCITT preparatory group (PC-WATTC).

Because of the potential implications of the revised regulations, the Bureau appointed a representative from the FCC and a representative from the "user" community, Control Data Corp., to co-chair the Study Group.

Starting with our U.K. bilaterals this past November we are systematically working to build international support for U.S. objectives.

The issues are complicated, since the debate is both international and domestic. Domestically, we find an environment with new players, offering new services, and new types of transport options; an environment which is vibrant as a result of the dynamics of change and which could be damaged by too restrictive or encompassing regulations. Yet, traditional "type" carriers are dependent upon sound protocols of understanding, i.e., regulations, to operate in an efficient, effective and competitive manner. The task becomes therefore to draft regulations which satisfy both market requirements.

The problem confronted internationally is that market concerns are, in large measure, subsumed by the prevalent philosophy of protecting the monopoly by limiting the intrusion into the monopoly revenue base. Thus the goal of a number of PTT interests is to revise the regulations by putting contraints on the use of the network and encompassing all entities that use the network.

The U.S. goal is to maximize the ability of U.S. industry to compete. The United States will pursue: ITU regulations which are flexible and allow for existing and future telecommunications requirements; ITU regulations which do not include detailed technical, operating, and tariff principles as these are the appropriate subject of non-binding CCITT recommendations; ITU regulations which cover only entities providing public international telecommunications services (not to include data processing activities); and ITU regulations which accommodate various regulatory philosophies.

In keeping with our practice, we shall be appointing a delegation chairman approximately one year prior to the actual negotiations.

Question. Last year, Congress ordered that the key government officials involved with international telecommunications meet regularly. Has this occurred?

Answer. Yes. In addition to ongoing interagency working groups, task forces, delegations, and other mechanisms which are convened on a regular basis to bring together the views and expertise of the three principal agencies, many issues also require the coordination and expertise of a number of other key agencies. Thus, the Senior Interagency Group (SIG) was established to provide a forum to deal with issues requiring broad interagency coordination at a senior level.

The Under Secretary for Security Assistance and the Coordinator meet on a continuing basis with senior officials of DOD, USIA, NSA, NASA, BIB and AID as well as with the heads of NTIA and FCC. With the latter two agencies, meetings or telephone consultations are held several times a month. By mutual agreement, we are now meeting even more often to discuss the range of issues of joint concern and responsibility.

Further, in the context of telecomunications trade matters, the Coordinator and the Assistant Secretary for Economic and Business Affairs meet at least once a month with the two Deputy USTR Representatives, along with the Undersecretary of Commerce, and heads of NTIA and FCC to enhance coordination of trade policy matters involving telecommunications.

These and other initiatives are assisting in our abilities to iron our differences and insure effective solutions to forwarding U.S. interests internationally.

Question. There has been much in the news over the past several months about the alleged wrongdoings at INTELSAT by the Director General and the Deputy Director. What has the U.S. been doing in regard to these problems at INTELSAT to ensure that our interests are protected?

Answer. Acting on external audit findings and allegations regarding the organization's two top officials, in early December the INTELSAT Board of Governors dismissed both officers, established a committee of former Board chairmen to oversee an internal investigation, and set forth a schedule for electing a new Director General. In addition to instructing COMSAT to aggressively pursue full investigation and appropriate management reforms in INTELSAT, a Bureau officer was present during the executive sessions of the Board which mandated a full and complete internal investigation and cooperation with appropriate U.S. authorities. Since that time, the Department has implemented with COMSAT, NTIA and the FCC an infor-

mation sharing mechanism which ensures that the principals of the three agencies are apprised of ongoing developments in the investigation. Additionally, the U.S. Attorney's Office is conducting a parallel investigation into possible violations of U.S. criminal statutes. We will continue to provide assistance to that office and to the FBI during the course of this U.S. investigation.

Question. What is the status of the PanAmSat consultation, and how did the U.S. fare on the consideration of economic harm to the INTELSAT system?

Answer. In December 1986, the 69th meeting of the INTELSAT Board of Governors decided to render favorable advice on the PanAmSat consultation to the Assembly of Parties. The United States anticipates a favorable recommendation from the Assembly when it convenes in early April 1987.

While supporting the conclusions of the Board, the United States recorded its disagreement with some of the methodologies and assumptions addressed in the Board's report to the Assembly on the PanAmSat consultation. In particular, the United States believes that a realistic assessment of economic harm to INTELSAT should take into account the fact that not all the traffic anticipated for carriage by a separate system represents diversion from INTELSAT. Furthermore, since INTELSAT can be expected to respond vigorously to market entry with cost-based service and pricing initiatives, as well as with internal streamlining to enhance efficiency and competitiveness, the Board's assumptions do not adequately take into account the dynamic telecommunications marketplace in which INTELSAT operates. We further also believe that the estimates of traffic and revenue diversion presented to the Assembly are unrealistically high. The United States will continue its efforts to improve INTELSAT's methodology, and to persuade the Board to use traffic diversion figures to assist INTELSAT in responding to, rather than attempting to block, competition.

Question. The U.S. adoption of its pro-competitive alternative satellite policy has caused many to question our commitment to INTELSAT. What does the U.S. see as the future of INTELSAT?

Answer. The Department views the role of INTELSAT over the next decade as continuing to provide a basic global commercial telecommunications satellite system as part of an improved telecommunications network. We will also encourage the use of the most advanced technology available and the most efficient and economic facilities possible consistent with the best and most equitable use of the radio frequency spectrum and of orbital space. We believe that INTELSAT can continue to fulfill this role if at the same time it continues to adapt to new technology and competition with the other non-global satellite systems envisaged by the INTELSAT Agreement.

Question. I have read with great interest recent speeches by the Director General of INMARSAT, Olof Lundberg. He talks about the need for INMARSAT to control aeronautical and mobile services provided by satellite. Should INMARSAT have a monopoly in the provision of these services? Is the U.S. going to sign the INMARSAT Agreement to permit INMARSAT to offer these services? How will INMARSAT's entry into this area affect our positions at the upcoming Mobile WARC?

Answer. The United States supported the adoption, by the INMARSAT Assembly of Parties in October 1985, of amendments to the INMARSAT Convention and Operating Agreement that would provide INMARSAT with the authority to offer its space segment for aeronautical telecommunications satellite services on a non-exclusive basis. The amendments will enter into force one hundred and twenty days after the Depository has received notices of acceptance from two-thirds of those States which at the time of adoption by the Assembly were Parties and represented at least two-thirds of the total investment shares.

The United States intends to accept the amendments as soon as practicable. We are currently developing appropriate groundrules for the provision of aeronautical services within the United States via the INMARSAT space segment.

From a U.S. perspective, INMARSAT's anticipated provision of aeronautical services in certain "L-band" frequencies on a non-exclusive basis is quite in consonance with the U.S. positions for the September 1987 Mobile Services WARC. However, U.S. proposals in L-band, involve recent domestic re-allocation decisions in this range of frequencies and therefore has not provided the U.S. with sufficient opportunity to explain its proposals to INMARSAT and others.

Question. I understand that INMARSAT has engaged in talks directly with the European aeronautical communications provider [SITA]. Yet, similar talks have not occurred with the U.S. provider, ARINC. What are your views about whether such direct discussions should occur?

Answer. COMSAT has justified its insistence on INMARSAT's differential treatment of SITA and ARINC by asserting that SITA is an international organization,

whereas ARINC is a U.S. corporation that must approach INMARSAT through the U.S. Signatory, COMSAT. It is our view that, regardless of the eventual structure of U.S. participation in INMARSAT provision of aeronautical services, ARINC should be accorded the same treatment by INMARSAT as SITA in its use of space segment for experimental and design purposes.

Question. It is now 25 years since we passed the Communications Satellite Act creating COMSAT. Since then, satellite technology has changed greatly, competition has come to communications, COMSAT has diversified, and now the FCC is considering whether to permit COMSAT and CONTEL to merge. In light of these changes, do you believe it is now time to review the 1982 Act, as well as the 1978 Act, to determine if these laws best serve the interests of the U.S.? I also wonder if it is also time to review the over fifty year old Cable Landing License Act?

Answer. In light of the changes which have occurred, we must reexamine the government's relationship with COMSAT, while keeping sight of our broader foreign policy goals in establishing that organization. Therefore, we support the view that a more formal and in-depth study of the 1962 and 1978 Acts must be undertaken, cast against the broader objectives of international facilities policy.

We have not identified a need for reviewing the Cable Landing License Act which, as written, we believe continues to serve U.S. interests.

Question. I understand that the State Department is trying to make better use of its personnel in embassies overseas to gather intelligence about telecommunications, and I want to urge them to continue to do this. Is it also possible to use Foreign Commercial Service officers to assist in this intelligence gathering?

Answer. One of our key initiatives, which is helping to improve our coordination abilities, is the establishment of the informal telecommunications attache program. With the designation of a specific telecom policy officer at every post and informal orientation for the officers at the fourteen key telecom posts abroad, we have set up a mechanism to insure better coordination abroad as well as here in Washington. Although this program was launched only last year, it has demonstrably increased our abilities not only to coordinate our bilateral and multilateral activities but to better identify and follow-up on USG and industry interests abroad.

Equally important is the responsibility of telecommunications officers at all of the other posts. Within the past two years the Bureau has undertaken an intensive program of education and information dissemination to enable all officers better to represent the U.S. in this increasingly important area. At a number of posts ambassadors have chosen to call on the skills of the officers of the Foreign Commerical Service to participate in this effort, especially, as is often the case, when there is a connection to trade in telecommunications goods and services. We encourage this use of Foreign Commercial Service Officers.

Question. I know we all recognize that our success in international telecommunications organizations depends greatly on developing countries. What is the U.S. doing to develop better relationships with these countries?

Answer. In promoting U.S. communications and information policy we must seek consensus from both the industrialized and developing countries on the major issues to be effective. This is particularly true in "one country one vote" organizations such as the ITU.

As a regular part of U.S. preparations for the major conferences of the International Telecommunication Union, we include the developing countries as an early component of our bilateral strategies. The dialogue with the developing countries intensifies during the course of the actual conferences. We believe that our practice of early consultation and consideration of the views of developing countries has contributed substantially to our successes at recent telecommunications conferences and defused much of the North-South polarization of earlier years.

In addition to bilateral consultations with developing countries, CIP regularly sends delegations to attend telecommunications-related meetings and working groups in Africa, in the Asia-Pacific region, and in Latin America. These various forums provide an opportunity for us to learn first hand the concerns and aspirations of the developing countries and to relate our own positions and priorities to theirs. For example, with the Coordinator's decision to increase U.S. involvement in the OAS-associated Inter-American Telecommunications Conference (CITEL), we have been able to develop more specific Western Hemisphere support for formal opposition to jamming and gain early consensus on a number of important ITU initiatives.

We have also strongly encouraged our private sector to take steps to strengthen ties with the developing world. The United Stats Telecommunications Training Institute (USTTI) is perhaps the best current example of U.S. industry support. Unfortunately, we believe that U.S. industry's apparent indifference to the Third World's

maket potential may become a serious problem in the future since other industrialized countries are much more agressive in developing these less attractive, but long-term important, markets.

Question. The Maitland Commission report showed that the telecommunications systems in developing countries have grave problems and that tremendous efforts and resources will be needed to establish modern telecommunications networks. What is the U.S. doing to assist developing countries in establishing modern telecommunications networks?

Answer. USG agencies have a long history of assisting the developing countries with communications development. In the 1985 study initiated by CIP some 23 USG agencies were identified as providing some form of communications-related assistance to the developing world.

With their limited and decreasing resources, USG agencies are necessarily devoting less attention to communications development activities. However, the activities of the U.S. Trade and Development Program (TDP) are a noteworthy exception. For instance, TDP has increased its financing of feasability studies and other planning services for large-scale, capital intensive development, primarily in the more advanced developing countries in which there might be a viable export market for U.S. industry. TDP's activities in communications assistance rose from less than 1 percent of its total program budget in 1980 to an estimated 30 to 40 percent in 1986.

AID in concluding a successful program demonstrating the application of communications technology for diverse uses in rural education, delivery of medical services, and increasing economic production and efficiency in transportation and agriculture. The results of the AID studies are being made available to developing countries. However, Congress has not allocated funds for further projects in this area.

It should also be noted that the Maitland Commission's recommendations call for the developing countries to raise the priority assigned to telecommunications development and to undertake internal reforms to generate the majority of resources needed for new capital investments. We continue to urge developing countries to adopt policies that will promote efficient operation of their telecommunications networks and attract private foreign investment.

The United States has also supported the creation of the Center for Telecommunications Development, which is a new multilateral mechanism for providing advisory services to the developing countries at the pre-commercial, pre-investment phase of project initiation. In 1986, the USG and private industry contributed $105,000 to the Center. The Department considers that a major beneficiary of the Center's work can be the private sectors of the developed countries which will see a great expansion of the market for goods and services and it has encouraged U.S. industry to join in this new undertaking.

The Department has also established an advisory subcommittee on communications development assistance to stimulate the interest of the private sector and USG agencies in communications development. This forum establishes U.S. positions regarding the Center and serves as a clearing house for disseminating information concerning specific requests for assistance received from developing countries. It also provides the private sector a mechanism for addressing its particular concerns to government policy makers.

The availability of new technology offers developing countries an opportunity to leapfrog into the modern era. But, the real problem comes down to obtaining the necessary financing to make the capital investments. In a time of reduced government resources for its overall foreign assistance program, USG concessional financing will not be available to support large infrastructure projects.

In order to qualify for additional export financing for communications development from international financial institutions, such as the World Bank, and the commercial banking facilities, recipients will have to meet the stringent criteria of these facilities. In the final analysis it will be the telecommunications policies adopted by the developing countries and the priorities they assign to them which will determine the amount and the effectiveness of external financing. We believe that policies which can attract significant private foreign investment will be most effective in bringing about telecommunications development in the Third World.

Question. What is the status of the Tel-Optik optic-fiber cable application?

Answer. NYNEX's application to transfer the landing rights from Tel-Optik, Cable and Wireless' partner in the Private Trans-Atlantic Telephone (PTAT) project, to NYNEX has been approved by the Department of State under the Cable License Landing Act with the caveat that the Department has reserved the right to revisit the license on foreign policy grounds. The Justice Department and Judge Greene are expected to take up to a year before making a final decision on the "line of business" waiver application.

Question. Will the State Departent support the use of the MARISAT satellite as a replacement satellite for PEACESAT? What can the State Department do to support the effort to re-establish the PEACESAT link?

Answer. The Department has informally brought together a number of the interested agencies to find an effective means of providing satellite telecommunications service to the strategically important Pacific region. Several questions remain concerning the cost-effectiveness of using MARISAT and the operational implications for DOD of such use. We will continue to work with interested parties on this.

Senator INOUYE. Thank you very much.

Before proceeding, I would like to announce that as Chair I will be recognizing Members according to their arrival sequence.

And if I may, may I request that the questioning on the first round be limited to five minutes.

We've heard much about policies and models, and I would like to now get into the real life.

AT&T is now attempting to enter the central office switch market in France. What are we doing to help AT&T?

Ambassador WOODS. Senator, we have been in close and intimate contact with AT&T as this process has moved forward, and as they attempt to enter the central office switch market in France, in the following respects.

We work closely with AT&T and made representations to the government of France about our concern that those decisions be made on a commercial and technical basis.

We wish those decisions to be made that way, and not on a political basis.

We have made representations to the government of Germany, which we feel has been trying to pressure the government of France with regard to that matter, so that the government of France will choose Siemans as their major central office switch manufacturer.

We have been very clear with both governments about the seriousness with which the U.S. Government is looking at this circumstance.

What we face in France, and the reason that this is so important, is that if France and Germany get together and cartelize the European telecommunications marketplace, we will be in a circumstance where we face a real, almost impossible, task of getting into Europe with U.S. equipment in the future.

And we look at this as very much of a test case as to whether or not this market is ultimately going to be open to U.S. central office switching suppliers.

Senator INOUYE. It's fine to be working closely and conferring at every level, and to express our deep concern to the governments there, but what if AT&T does not succeed? What are we prepared to do?

Ambassador WOODS. Well, it is not altogether helpful to pull out all of our arrows from our quiver and shoot them all at one time.

But I think we've made it clear to both governments that we view this seriously and are prepared to take strong steps if we don't feel that the decisions in France are made on a commercial, financial, and technical basis.

Senator INOUYE. Are we prepared to take drastic steps?

Ambassador WOODS. We feel we are prepared to consider taking very drastic steps in that marketplace, Senator.

Senator INOUYE. So these two governments should take your concern very seriously?

Ambassador WOODS. We have made that quite clear, and I believe they do, in fact.

Mr. FOWLER. Senator, if I could just interject something? We have, as Mr. Sikes mentioned, have regular what we call breakfast club meetings with the other agencies. The heads of the agencies get together to coordinate and this matter was first brought to our attention at a meeting late last year by I believe Undersecretary Smart.

The principals determined on several courses of action, one of which was our consent and our willingness, the FCC, to send out a letter to all seven regional Bell operating companies asking for information as to their plan to procure equipment supplied by Siemens, the West German manufacturer, which is attributed as the moving force behind the efforts by the West German government to, in effect, destroy the AT&T agreement with CGCT, and to have Siemens purchase CGCT.

We think that that—and I think that the principals all agreed was a useful first step, because it sends a clear and unmistakable message that we're interested in what Siemens is doing in the United States.

And in our international item, we indicated that if the executive branch—one possible option would be that if the executive branch—that is Mr. Woods, USTR, the Commerce Department—were to certify that a given market was closed, we could require, for example, the Bell operating companies to file procurement plans with the FCC, and we could find it in the public interest that certain kinds of equipment from a particular country that was adjudged to be closed could not be procured, and find it contrary to the public interest.

Having said that, I want to make it clear that we believe, because we are not the trade experts, that the certification process would have to be done by the trade experts.

We also recognize, as Ambassador Woods has said, it's a very complicated, difficult process. It is not susceptible to quick and easy solutions.

Senator INOUYE. Would you provide this Committee with a memo on the activities of Siemens?

Mr. FOWLER. Yes, sir, to the best of our knowledge, we can coordinate that and get that to you.

[The information was subsequently received for the record:]

FEDERAL COMMUNICATIONS COMMISSION,
Washington, DC, March 13, 1987.

Senator DANIEL K. INOUYE,
Chairman, Subcommittee on Communications, Committee on Commerce, Science and Transportation, U.S. Senate, Washington, DC.

DEAR SENATOR INOUYE: This letter is in response to your request, at the February 26, 1987, hearings on U.S. International Telecommunications Policy, for information concerning Siemens AG. It provides an attachment that summarizes the telecommunications activities of Siemens AG in the United States.

As you know, the Commission at present does not have detailed information concerning the nature and extent of participation by foreign-owned firms, such as Siemens, in the U.S. market. We do have some specific and limited information on Siemens' activities in the U.S. that was provided in response to my letter to the seven Bell Regional Holding Companies and GTE, but this information was generally pro-

vided on a confidential basis. In our December 23, 1986, Notice of Inquiry and Proposed Rulemaking, however, we have proposed new rules that would provide us with this information for all foreign-owned firms. Indeed, I believe that your request demonstrates the importance of having such information readily available to the U.S. government.

The National Telecommunications and Information Administration (NTIA) assisted the Commission in responding to your request by providing us with information that NTIA has compiled concerning Siemens activities in the United States. I would like to acknowledge and thank NTIA for its contribution to the summary we have provided for the record. The summary we have provided is based on the best publicly available data, however, and we are not able to vouch that it is completely accurate in all respects.

Thank you again for your interest in this matter. If I may be of any further assistance, please do not hesitate to contact me.

Sincerely,

MARK S. FOWLER,
Chairman.

Attachment.

A SUMMARY OF THE TELECOMMUNICATIONS ACTIVITIES OF SIEMENS AG IN THE UNITED STATES

Siemens AG, a West German industrial firm based in Munich, had estimated sales of $25.4 billion in 1986. Siemens AG is the third largest telecommunications equipment manufacturer in the world behind AT&T and CGE/ITT. The Deutsche Bundespost has informed NTIA that Siemens will be the principal supplier of digital electronic switches as part of a DM30 billion program to modernize the West German telephone network. There has been no evidence to suggest that U.S. telecommunications suppliers will be allowed to participate in this major program. At present, approximately one-third of Siemens' worldwide business comes from the sale of telecommunications and information systems. Moreover, it has been estimated that Siemens has between 6 and 10 billion dollars in cash reserves.

The annual report of Siemens Capital Corporation, headquartered in New York City, states that is the financial holding company for shares of all the Siemens companies in the United States (hereinafter Siemens USA). Siemens USA reports that it had record sales of $1.9 billion in fiscal 1984/5. NTIA estimates that $925 million of these U.S. sales were communications products.[1]

Siemens has several companies that participate in the U.S. telecommunications marketplace, including the following: (1) Siemens Communications Systems, which is based in Boca Raton, Florida; (2) Siemens Information Systems, which is also based in Boca Raton, Florida; and (3) Siecor Corporation, a 50-50 joint venture with Corning Glass Works, which is based in Hickory, North Carolina.

In its annual report for 1986, Siemens USA states that the post divestiture era represents an excellent marketing opportunity for Siemens to supply the Bell Operating Companies and other telephone companies with communications equipment. Indeed, it has been estimated that Siemens has spent between $800 million and $1 billion developing the EWSD switch and another $200-300 million dollars adaptng the EWSD switch to the U.S. market.

NTIA states in its report that Siemens has sold specialized digital switches, and other switches for trial purposes to Ameritech, BellSouth, Bell Atlantic, and NYNEX. Volker Jung, Senior Vice President and General Manager of Siemens Communications Systems, has stated that "[w]e hope to be the number 3 supplier" behind AT&T and Northern Telecom in the United States.[2] And on March 6, 1987, Communications Daily reported that Siemens Public Switching Systems will use 2 existing sites in the United States—Cherry Hill, N.J. and Haupauge N.Y.—to begin manufacturing EWSD central office switches. A generally held view is that the EWSD system is the central part of Siemens' effort to prepare for the introduction of an integrated services digital network (ISDN) that includes the simultaneous transmission of voice, video, text, and data.

A wholly-owned subsidiary of Siemens Communications Systems—Databit, Incorporated, which is located in Hauppauge, New York—supplies packet-switching systems to the Bell Operating Companies (BOCs). It has been estimated that Siemens

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[1] *See* NTIA Trade Report, "Assessing the Effects of Changing the AT&T Antitrust Consent Decree," United States Department of Commerce Special Publication.

[2] See Electronics, June 2, 1986.

has more than half of the U.S. market for these systems, with at least 15 of the 22 BOCs using Databit's packet switching systems.

Earlier, Siemens completed the acquisition—for $420 million—of an 80% interest in both: (1)GTE Corporation's international public switching and international business systems operations; and (2) GTE Corporation's transmission businesses. Therefore, Siemens has a majority interest in what was formerly GTE's international public switching operations in Taiwan, Italy, and Belgium. Moreover, although the Siemens and GTE agreement does not include Siemens' or GTE's public switching businesses in the United States, Siemens now has a majority interest in GTE's domestic transmission operations that were formerly the Transmission Products Division of GTE Communications Sytems, Inc.

Siemens Information Systems, Inc. offers private branch exchanges (PBXs), including a "Saturn" series of PBXs, and other terminal equipment in the United States, with estimated sales of $100 million in 1985. Siemens recently purchased, for $165 million, Telecom Plus Communications, Inc., a company characterized by Communications Daily as the "country's largest interconnect" company.[3] H.W. Krause, President and Chief Executive Officer of Siemens Information Systems is quoted as stating that "[t]he full acquisition of Tel Plus Communications further underlines our commitment to the U.S. market." [4] Earlier, Dietrich Arbenz, Siemens Information Systems' Vice President for Marketing and Sales was quoted as saying: "Siemens has realized that 50% of its accessible market worldwide is in the U.S. The only way to increase share in the [customer premises equipment] market today is by increasing volume and reducing cost." [5]

Siemens Information Systems also has a Telephone Products Division to market single-line phones in the U.S. Virgil De Oliveira, Siemens Information System's National Sales Manager, has said that Siemens hopes to capture 5 percent of the 30 million units that it expects will be sold in the United States in 1990.[6]

As stated earlier, Siecor Corporation is a 50-50 joint venture between Siemens and Corning Glass Works. In its report, NTIA states that Siecor is the principal competitor in fiber optics in the U.S. to AT&T, and estimates that AT&T today has slightly less than half the U.S. market for fiber optic cable. Siemens USA states that with recent plant expansions, Siecor now has the largest optical cable manufacturing facility in the United States. Siemens USA also states that it has sold optical cable for trunk lines to the BOCs, to AT&T's long distance competitors, and to the major independent telephone companies. Finally, Siemens USA reports that Siecor has established a new 50-50 joint venture with Bell-South, known as FiberLan, Inc., to serve the so-called local area network (LAN) market.

Senator INOUYE. Thank you. Senator Hollings?

The CHAIRMAN. Well, let's follow up on that, because that is what really interests me, Ambassador Woods, when you come and give the typical, helpless, we're going to obtain open market access in foreign telecommunications markets, and not closing our market or restricting our imports as a top priority.

That is bureaucratic doubletalk for doing nothing. Because that's what we've heard, and that is why we've gone from a plus $500 million to a minus $2 billion.

Now I'd like to put Chairman Fowler in charge. He's a competitor. He and I don't agree on too much. Two years ago Chairman Fowler said they had no responsibility whatsoever in trade, but now he's thinking otherwise.

You've got such a vacuum, most respectfully, Ambassador Dougan and you in the trade representative you're representing the other side.

These conversations, meetings, rhetoric, and everything else of that kind mean absolutely nothing because we continue to go out of business.

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[3] See Communications Daily, January 5, 1987.
[4] See MIS Week, January 12, 1987.
[5] See Network World, May 19, 1986.
[6] See Communications Week, October 20, 1986.

Trade is trade, swapping for a consideration, a give and take, reciprocity, retaliation. It's dynamic. There's nothing wrong with it.

You all act like you're supposed to just make friends and disperse the American industrial capacity, and otherwise destroy the industrial backbone here.

Now, Chairman Fowler, I'm glad to see you've finally agreed to get into trade. You are the trade expert, because I can tell you've got more initiative already than the other folks here at this table.

What else do you expect to do? Tell us about it before you leave town.

Mr. FOWLER. In fairness to the others, the essence of——

The CHAIRMAN. Don't defend them. Just tell me what you're going to do. I've had enough of this. I mean, we've got to get going, and you're filling a vacuum. I don't think the FCC really ever was intended to try to get into international trade or be punitive or retaliatory in any sense, but you have to fill a vacuum.

Mr. FOWLER. Let me answer the question in two parts. First, I just want to say one simple thing, and that is in fairness to the others.

The action we took was one that came about as a result of the coordinating process that we have. The Commission has issued a rulemaking which, as I indicated before, talks about establishing an international model.

I think that is important to begin to construct a model. The kinds of components that we would look at, and it could even be expanded generically to all trade matters, that the world should aspire to.

I think that is the first step, even if it's late, that we do that, because that means we start to talk about a standard we can measure people against, instead of saying simply that something doesn't appear to be open, or they did this bad thing or that bad thing.

The international model, Senator Hollings, consists of four parts.

What is the status of open entry in a given country? Is it open, or is it essentially closed? Can you get in as a company to begin to do business?

And having gotten in, is there discrimination practiced——

The CHAIRMAN. Now, Mr. Chairman, in all fairness, I'll give you the model, MITI. It's not a model in communications. It's a model in competition. They use their government to comparative advantage. And it's fine business.

Now I'm not bashing Japan for doing it. That's the dynamic. That's the international playing field. And I'm trying to get my government into it, and not study it.

We know what it is, and we've got to meet this kind of competition. In fact, we're all the way downstream.

I'm worried, for example, in the Department of Justice recommendation with respect to the Bell operating systems being released to get into the market, that they don't further destroy our industrial backbone.

All we have, I guess, is AT&T and Northern Telecom. So the Bell operating companies could come in and go in with Siemens, go in with the Japanese, and the next thing you know, in the name of competition, we've destroyed the only two capacities to produce in this country.

What do we do about that? The model is MITI, and you can start with that. France followed it, Germany followed it. So you've got the model: I'll mail it to you.

So you don't have to worry about the model in competition. That's the dynamic out there.

Now how do you intend to meet that bottle of competition?

Mr. FOWLER. Let me just answer it this way. The model is a standard. And it is not simply something we talk about in academic terms. It is dynamic. It means something.

Because what it means is, these are certain standards we're going to compare people again. If they don't meet those standards, which we think are the correct standards—open entry, nondiscrimination among various companies regardless of their country of origin, whether they have a standard setting process that permits outside foreign entities such as American companies to participate in the setting of standards, to make sure that the standards are not another way to achieve protectionist effect, and whether or not the other country honors comity, that is, whether it for example subscribes to the various ITU regulations, whether or not it adheres to GATT; these are the four components of the model.

Now the second part, and relevant to your immediate question, Senator, the second part of what we proposed to be then to compare, in telecommunications, various countries against these components, and if they did not measure up to this, the executive branch would certify to the Commission that they did not, that it was essentially closed.

And then we talked about being able to use Part 68 of our registration rules, which has to do with the registration of equipment, to deny their ability to register equipment, for example, in the United States; to deny their ability to sell switches to Bell operating companies; to deny their ability to provide interstate long-distance service.

These are very real kinds of reciprocal actions. But I think it's important to have a model, because it's a very difficult area, and if you don't have a standard, I don't think you're going to achieve the kinds of results that you can achieve if you have a clearly understood standard that people understand you're measuring people against.

The CHAIRMAN. Thank you, Mr. Chairman.

Senator INOUYE. Senator Packwood.

Senator PACKWOOD. Mr. Chairman, I want you to take Senator Hollings half seriously; not fully. Because last year we passed a textile bill that imposed textile limits on various countries in the world—Hong Kong has no closed market; we can sell anything we want, telecommunications equipment or anything else.

I find many people that talk about wanting access to foreign markets really want to close our markets, regardless of whether the foreign markets are open or closed.

But there is a legitimate case to be made about the closed foreign markets. And I have no hesitancy for the FCC to get into it, if we cannot in some other way pull an arrow from our quiver, as Ambassador Woods has indicated, and bring down the quarry.

I'm not sure I know any answers, exactly. When we had testimony in the Finance Committee on the trade bill, former Ambassador

Strauss, in terms of retaliation, said, well, yes, what he would like to do when you have closed foreign markets and unfair competition, is make it compulsory but not mandatory.

And I don't know how to draft that kind of law. If I could, I could make a million in the stock market, I think.

But I want to ask Ambassador Woods, what do we do? We don't have to shoot all the arrows at once, but the patience of this country is wearing thin when legitimate business leaders come to us and say, I can compete against the Germans in Brazil; I can compete against the Japanese in Australia; but I cannot get into their market; what are the arrows you're talking about?

I honestly don't think the Administration has much more than three or four months before our patience snaps due to these legitimate complaints that we do not seem to be able to solve.

And I want to say a word, not just in defense, but I'm proud of the administration. With all of these complaints about no retaliation, this is the first administration that has been willing to undertake any kind of retaliation.

We didn't have any in the ten years prior to 1980, so at least this administration has tried in some areas.

Ambassador Woods. Well, if I can limited my response to some degree just to telecommunications, Senator, because I think that is quite important.

We didn't have a telecommunications trade problem, as Senator Hollings correctly points out, until after the decision to dismantle the AT&T system.

That decision was made not for trade reasons; that decision was made for domestic telecommunications policy reasons, and for reasons relating to operations of monopolies and all sorts of reasons that didn't have much to do with trade.

Our trading partners haven't made decisions like that, many of them. Some of them are now approaching them; some of them are working at the questions and examining their own domestic market and saying, you know, we are too restrictive in our market; maybe we ought to open it up and we ought to liberalize that marketplace.

And presumably, if they begin to do that, that is going to provide us with greater market opportunities for telecommunications equipment and services; which are not unimportant services in those marketplaces.

We don't want to shoot all our arrows at once because there is a process going on in the world that should benefit us.

If we adopt a hatchet approach or a cleaver approach where a scalpel approach is more appropriate, then we hurt ourselves in the end.

We want to encourage the opening of these markets. We want to encourage the movement of governments away from state owned monopoly circumstances.

Some people aren't going to do that, and with those people, yes, we ought to use the cleaver. We ought to use the opportunities we have under 301 of the trade act to impose duties.

We could even embargo products. We could impose quotas under Section 301 of the trade act, as you well know, Senator.

Those are all arrows in our quiver, but those are arrows which are best used judiciously. And when we threaten the use of those arrows, we had better be prepared to use it specifically in that situation, or we will lose our credibility.

Senator PACKWOOD. Is there a way you can draw up a law so that our foreign trading partners will understand that you might have to use that arrow without exactly having to use it?

Ambassador WOODS. You're compulsory but not mandatory question?

Senator PACKWOOD. Yes.

Ambassador WOODS. I guess I probably could make as much money on the stockmarket as you could, Senator, if I could draft a law like that.

Senator PACKWOOD. Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

Senator Wilson.

Senator WILSON. Thank you, Mr. Chairman.

Let me pick up on a theme that has already been sounded this morning with respect to the frustration expressed by the full committee chairman.

I share some of that. To be specific, last summer, the commission made its decision, for which I was most grateful, in the allocation of frequencies in the 800 Megahertz radio band, and one of the major concerns at the time was public safety, which received most of what it wanted.

Another issue at the very same moment involved a Canadian concern that a certain number of frequencies be assigned in that same band for use by mobile satellite services for MobileSat.

And Canada specifically wanted the United States to make such an allocation in that 800 Megahertz range, because they were also planning a system in this band.

And their hope was that the two systems could serve as backup for each other. The Commission allocated all but two of the available frequencies, and none to NSS.

An unstated but very clear reason for the posture vis-a-vis Canada was its policy on the ongoing theft of TV signals. During last years preceding at the Commission, on that allocation, I discovered that the State Department had been pressing the Commission to accede to the committee and request that a generous allocation be made to the MobileSat operation.

And while at the very same moment the free trade talks between the United States and Canada, State had not notified the U.S. trade representative of what it was doing.

Now, can you explain that to me, Ambassador Dougan? Did the State Department realize that granting the MobileSat request that the Canadians were seeking, that they had made, would have hurt U.S. police, fire, and other public safety agencies in the United States.

Ambassador DOUGAN. Sir, I think Chairman Fowler can attest to the fact that this has not been an easy decision on the part of the Commission in terms of trying to strike a balance between supporting what we all agree are the very important services of public safety within the United States which currently uses those fre-

quencies, and the need to make room, and if you will, squeeze frequency for other services.

In 1982, the U.S. Government, the State Department, on behalf of the Federal Communications Commission, signed a letter of understanding with Canada which included the consideration of allocations of frequencies within the 800 bands. In that context, we have been working with the Federal Communications Commission and with the Canadian government to try and accommodate what the Canadians believe to be a more than good faith understanding that, if it is possible to find allocations within those 800 bands, the Federal Communications Commission would do so.

It has been thoroughly reviewed. We have been having discussions with them in terms of the broader trade negotiations that were going on. Yes, it was well understood within the whole framework of the Federal Government that these were all going on at the same time.

But I think that we try to decide these issues on the technical merits, in and of themselves.

Senator WILSON. Let me interrupt you there, because unfortunately we have limited time.

You used a phrase a moment ago that I think is key. You said, good faith. Considering the fact that it is an official Canadian communications policy to allow a Canadian company to pirate U.S. television signals and retransmit them through Canada, why was the State Department helping Canada with its MobileSat request, that agenda, entirely independent of reaching settlement on our own longstanding theft complaint?

Ambassador DOUGAN. No, it was not entirely independent of our other ongoing communications-related issues with Canada. We were not necessarily just helping the Canadian government. We had come from a very much America first, United States first approach.

But there was a document that was signed by both governments and if it was possible to find an accommodation in that framework, we were working to do so.

The discussions are still ongoing between the U.S. government and Canada, both the State Department and the Federal Communications Commission are involved in that process.

I believe that the change in technology itself may have some impact on the ability to look more favorably on the higher L-band frequencies, which is where the Commission feels the primary use of mobile satellites should be.

Senator WILSON. I must say, I don't share your optimism. It appears to me Canada isn't willing to settle any commercial complaints that we have with them, with the United States, than in the context of these ongoing free trade talks, if in fact they are willing at all to settle any so-called cultural sovereignty issues.

Frankly, I don't understand why State has been working with the Canadians, as I understand it, without coordinating with the U.S. Trade Representative, which is, after all, the lead agrency on these talks.

And frankly, I think they are both better equipped to protect American interests than the State Department which I must say, notwithstanding your protest to the contrary, seems from all the

evidence to have been working a hell of a lot harder for the Canadians than for the U.S. interests, including police and fire which I rank very high.

Ambassador DOUGAN. Sir, I don't happen to have a striped-pants suit on, but I do believe the State Department has a pretty clear record under this Administration of forwarding U.S. interests.

And this issue was primarily a technical and not a trade issue. The USTR's office was not actively involved because it is not something that they had a special interest in.

But they were aware of the process, and our Economic and Business Bureau within the State Department, which handles trade issues, was also involved.

Senator WILSON. Well, my time is up, but I must respectfully disagree that it is more technical than a trade issue.

Senator INOUYE. Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman.

And I would like to, without fear of being too redundant, share the prevalent opinion here that has already been expressed of some dismay over the rhetoric here by the witnesses in light of the fact that the frustration level continues to increase.

Because I think it is obvious that there has really been very little reciprocal action on the part of our trading partners, as far as opening their markets are concerned.

And despite, Ambassador Woods, some of the things you have to say about, there has been—pleased with progress to date but concern over some of the remaining problems, as you say in your statement, and others, industry people whose livelihoods are dependent upon our actions and that of our allies, our trading partners, don't agree with you.

One of our witnesses in the third panel, Mr. Fisher of Motorola, says we need a strong Congressional mandate for the administration to negotiate meaningful access to our trading partners' domestic telecommunications markets.

Failure to achieve this goal must result in mandatory and meaningful countermeasures.

The only leverage we have left is access to our own market. Do you disagree with that statement, Ambassador Woods?

Ambassador WOODS. Not necessarily, and I don't think that statement is necessarily in contradiction to what I was saying.

We are negotiating access to foreign markets in trade terms. We obviously are strengthened in any negotiation in which we proceed when there is a Congressional mandate to do so.

We are also prepared to take action which might close our own markets, if we don't feel like we're making progress. But closing our market is not, in our view, the issue. The issue is access to the markets of others.

Senator MCCAIN. Well, I would suggest, then, perhaps that this committee ought to look at a Congressional mandate.

Ambassador Woods, you say in your statement, ultimately success can only be measured by increased U.S. sales and increased U.S. market share.

For example, Ambassador Woods, do you recollect the U.S. market share of Japanese telecommunications market in 1984? I think you will find it's around 10 percent.

Ambassador WOODS. I know the precise number of sales, but I don't know what the market share was.

Senator MCCAIN. I think it's about 10 percent. Do you know what it is today? It's roughly the same.

Doesn't that indicate to you that despite the agreements that we have received from the Japanese, or commitments from the Japanese to open their markets, that so far, that simply has not happened?

Ambassador WOODS. Well, a couple of things have happened in Japan that I think our industry has been involved with and endorses. And they believe that new opportunities are available to them in Japan.

These issues ultimately do turn on whether you're successful or not, on whether, as I put it, the cash register rings. That is, in the end, the substantial test.

But the cash register doesn't ring the next day after you reach a government to government agreement. The reason it doesn't is because U.S. companies have to go over there, and they've go into their marketing and sales activities.

The Japanese market is still a very difficult market to sell in. The companies agree with that.

We don't have a different view of that subject.

Senator MCCAIN. Well, since April 1, 1985, the privitization of NTT took place. And so far, all of the numbers that I've seen, there's been absolutely no change, although we don't expect immediate response in the cash register, I would expect that there would be—you could detect at least some movement, which we've not seen so far.

Another aspect of this dialogue we've had, which I'm in disagreement with, that no, we don't want to shoot all the arrows in our quiver. I agree with that.

I would like us to shoot one; just one. Why don't we just try shooting one. Have we shot any arrows yet?

Ambassador WOODS. Yes, indeed, we have. In fact, the United States has used the retaliatory actions of section 301 of the trade act seven times in the last 18 months, and that is the first time those arrows, as it were, have ever been used by any administration.

Senator MCCAIN. We also made an agreement with the Japanese on semiconductors, which, in the minds of any expert, there has been at least two-thirds noncompliance on the part of the Japanese.

Ambassador WOODS. Yes, Senator, and we had delegations in Japan last month. We've got Japanese in Washington today, and we've made it clear to the Japanese that if changes do not occur in the period of time between now and the end of March, I think you will see very strong actions taken by this government to deal with exactly that issue.

Senator MCCAIN. Well, I certainly hope so. And if there is not, I would suggest that Congress give the mandate to you to take certain actions, as is being recommended almost unanimously by the industries in the U.S. that are having their businesse dramatically affected by the continued noncompliance on the part of our trading partners.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

I think the record should show that we did fire a few arrows. The Scotch and the gin, apparently they worked.

Senator WILSON. I'm not sure at whom those were aimed, Mr. Chairman.

Senator INOUYE. Senator Danforth.

Senator DANFORTH. Mr. Chairman, thank you very much.

Today, Mr. Chairman, you and Senator Wilson and I and others will be introducing the most recent edition of the telecommunications trade bill.

This is legislation that was first introduced in 1984. Thus far, nothing has happened.

The theory of the legislation is very simple, and it's what we've been talking about today. And that is, with the AT&T divestiture and the deregulation of the U.S. market, the U.S. market for telecommunications equipment was no longer a captive market.

Prior to divestiture, Western Electric had a captive market. It could sell anything it produced to the Bell operating companies.

With divestiture, the operating companies could buy telecommunications equipment from whatever source. And the effect was precisely the same as a unilateral trade concession. Precisely the same as a unilateral trade concession.

And as a result, largely, maybe entirely, as a result of divestiture, we've had this major change in the U.S. trade position in telecommunications equipment.

In 1982 we had a $580 million surplus in world trade in telecommunications equipment. In just four years, that went from a $580 million surplus to a $1.7 billion deficit.

The fact is that our market is open now, and other markets are closed; and I don't think that there's been any dispute of that fact today.

I don't understand why it is in the interest of any country to negotiate down barriers, or to open up their market, unless it is clear that something bad is going to happen to them if they don't do it.

Otherwise, they're going to talk, they're going to set up trade missions, but not very much is going to happen.

And the point of the telecommunications trade bill is to say that the President has 18 months to negotiate down barriers, to negotiate something in return for access to the U.S. market; 18 months of talk, 18 months of negotiation, and then if nothing happens, then we will treat other countries as they treat us.

I think, to me, that is beyond dispute. To me that is not an arguable point. If our market is open, other countries' markets should be open. If other countries choose to close their market, and we can't negotiate those barriers away, then the United States must retaliate, or else there is absolutely no disincentive to market closing.

I don't think that there is any argument on the other side that I've understood except for the fact that the Administration, again, has opposed the telecommunications trade bill.

I have been reflecting on the reason for the opposition. And I think maybe the reason became clear yesterday. There was a meeting at the White House in the cabinet room. There were about 7 or

8 members of the Senate present, the President, the Vice President, the U.S. Trade Representative, the Secretary of Commerce, the Secretary of Labor, and other officials.

And we were there to talk about the Administration's competitiveness package. By and large, there was a spirit of accommodation and understanding. And my understanding of the whole point of the meeting was that the administration was attempting to open some channels to Congress and work with us on a competitiveness package; and that that was the reason we were invited to the White House in the first place.

Then I pick up the morning paper, read the business section and see that within hours after that good feeling meeting in the Cabinet room of the White House, the U.S. Trade Representative in the Old Executive Office Building made a speech to the National Press Association, lambasting a trade bill which was introduced a few weeks ago by Senator Bentsen, the Chairman of our Finance Committee, and cosponsored at least 58 members of the Senate; a gratuitous attack.

My conclusion, Mr. Chairman, is that the position of the Administration is, no matter how good the idea is, if it originates in Congress, they don't like it.

Obviously, I want to give Mr. Woods an opportunity to respond out of fairness. Maybe there is some flimsy excuse for not supporting something as clear as the telecommunications trade bill, as clearly justifiable as the telecommunications trade bill.

I'd point out, Mr. Chairman, that had we enacted this in 1984, we only had a deficit of $600 million in 1984; now it's gone in two years from $600 million to $1.7 billion in 1986. So any compensation that would be owed by the United States because of any retaliation has been, what just about tripled as a result of delay in passing legislation which should have been passed two years ago.

Ambassador Woods, I've had my inning, and now it's yours.

Ambassador WOODS. A couple of things, Senator. I think in the area of telecommunications trade, you began by making exactly the appropriate comment. We did, unilaterally, in trade terms, provide a trade concession to our trading partners, a decision which, as best as I can tell, and I think I mentioned this earlier, was not based on trade considerations; that that just wasn't a part of the AT&T divestiture debate.

Up to that time, our circumstances, as it related to telecommunications trade was not very different than that our trading partners' telecommunications trade laws are today.

It took us a long time to get there. It didn't happen overnight. We didn't just sort of wake up one morning and say, we're going to divest.

And it's not going to take, in all likelihood, 18 months for our trading partners to make the same kind of decision. Some of them are approaching that question now; some of them aren't.

We ought to be pressuring the heck out of all of them to do so. It's a good idea. It's good for trade; good for the United States; and frankly, we think that kind of thing is probably good domestic policy for them. That's point one.

Senator DANFORTH. We're going to pressure you. And if you don't open your markets, we'll hit you with our purse; is that it?

Ambassador WOODS. That's not what I said, Senator. I believe personally, and I think many in this government believe, that we should take tough actions against countries that don't open their telecommunications market to the United States.

I don't think you can sort of cookie cutter them, because I don't think each one of those markets is alike. I think they have to be dealt with differently.

And that's the approach we're trying to take now. We are looking at each country as a separate entity, and trying to get each of those countries' telecommunications markets open.

And I think before the process is over, you will see, without passage of a telecommunications sector-specific bill, U.S. taking retaliatory actions on the basis of telecommunications trade.

I don't think there's any question about that; at least in my mind. I know there is in yours, Senator. So that's point one.

Second is that some folks aren't going to change. Some folks aren't going to change as much as maybe the standards we'd like to apply to them would suggest that they're going to need to change.

They're going to change some. They might not go all the way. Do you then say, okay, we'll take what you've given us. Or, by the way, we'll take what you've given us, but now we're going to retaliate against you.

Does that make sense? I'm not sure that it does. And I think we have to have flexibility. These things are complicated; they're complex.

I think every member of this committee that's spoken today has talked about the complexity of telecommunications trade. And you just can't take, it seems to us, a cookie cutter approach with each and every nation on these activities.

We do have the ability to retaliate. That is not a question of whether we can or not. Section 301 of the trade act gives us plenty of power to do so.

Senator INOUYE. I would like to pose another problem. Up until now, telecommunications activities in Europe were handled differently by each country, but apparently today European countries are getting together to come up with pan-European solutions.

I gather that discussions are now in progress on data services. Are we doing anything about this?

Ambassador WOODS. I'm glad you asked. We've had communications with the European Community most recently. As you know, the Community has traditionally not had responsibility within Europe for telecommunications matters.

They are tentatively moving in that direction at this point, and we are talking to them, as they go through their decisionmaking process.

The last meeting on that subject occurred in either the last week of January or the first week of February. The point we are making to the Europeans is, as they move to liberalize their markets, to open up European markets for both telecommunications services and equipment, do not do so in such a way that you will exclude us from that marketplace.

They have not reached decisions yet. They're going through the phase that we went through from the end of Carter to the breakup of AT&T, in some respects; you could look at it that way, I guess.

We are very much involved, and we are doing what we call "putting our markers down," to make sure that as they liberalize their markets, they will allow for U.S. competitors in that marketplace.

Senator INOUYE. Well, this morning's hearings have concentrated on our efforts in the telecommunications. Is the administration considering other policies, such as R&D assistance or investment incentives, or the active use of our embassies to assist in the marketing of our goods and services, as other countries do?

Ambassador WOODS. Well, of course we have an active U.S. and Foreign Commercial Service that is available to the U.S. business people who want to make use of our embassies for assistance in their marketing.

Frankly, in the field of telecommunications, we are dealing with major, significant U.S. companies, in most instances, that are interested in international opportunities in telecommunications. And they have sophisticated, large marketing staffs.

When they come to us for help, as AT&T has in the circumstance in France which you alluded to in your initial questioning, we are helpful, and do go to governments, both at the embassy level, as Ambassador Rogers has done in France, and from Washington, as Ambassador Yeutter and Ambassador Smith and I have done, with regard to making it clear that we're watching this situation very closely.

Ambassador DOUGAN. Senator, I think another dimension, in addition to the trade and marketing aspects that Ambassador Woods has referred to, is the issue of standard setting and the regulations within these countries.

And as I mentioned in my own testimony, in relation to our telecommunications attache program, much of the problem ends up not being one company trying to do business with another company, but the regulations and the standards within that country.

And so part of our efforts—and obviously, USTR and Commerce take the lead in trade issues—but part of our efforts are to take advantage of what we think is a growing liberalization, particularly in Europe, in the enhanced service area.

Now, we don't have wild expectations that the basic services or that the PTTs are suddenly going to become open, but in the enhanced service area, we are making, we believe, substantial strides in getting them to open up their markets in their own self-interest.

So when we're talking about how many quivers and how many arrows, other dimensions include standard setting. For example, in the European community, one of our concerns is a European-only approach to standard setting. And we're working very, very vigorously to avoid that kind of European-only approach, because we think that the broader international standard setting process is imperative for market access.

Senator INOUYE. Thank you very much.

Senator Packwood.

Senator PACKWOOD. No further questions, Mr. Chairman.

Senator INOUYE. Senator McCain?

Senator MCCAIN. No further questions, Mr. Chairman.

Senator INOUYE. I will be submitting several questions for your consideration, and if I may, I would hope that you could respond to them.

Senator DANFORTH. Could I just ask one other question, Mr. Chairman? The Justice Department's recommendation allowing Bell Operating Companies to manufacture telecommunications equipment does have trade implications for the United States, does it not?

I know that Secretary Sikes has pointed this out with respect to switching equipment, but the point is that the same operating companies that had been dependent on Western Electric for telecommunications equipment, if they are now in the manufacturing business, quite likely will locate their manufacturing facilities offshore or enter into joint ventures with foreign manufacturers.

Mr. SIKES. Well, we believe that freeing the regional Bell Operating Companies to manufacture could have both positive and potentially negative effects. We see in areas of software, in certain niche markets, the real likelihood that the regional Bell Operating Companies would bring a mnufacturing expertise to the marketplace that would work both domestically and put them in a position to sell internationally.

And so, it is not in any sense all negative. Now, the negative area that you referred to is potentially in the area of central office switching. The analogy has been drawn between central office switching and the jet engine business, incidentally.

There is an international consolidation going on. To the extent that companies in sheltered markets overseas are allowed to joint venture with Bell Operating Companies, that would then provide them in a sense special access to this market because of the franchise that Bell Operating Companies have. If this occurred in advance of the market openings for our providers overseas, I think very definitely there would be some risk to the indigenous central office switching equipment manufacturing capacity of this country.

It is clearly extremely important in a strategic sense and we are currently, in the Administration, evaluating exactly what steps should be taken to assure that does not occur.

Senator DANFORTH. It is your view that there should be some mechanism for the Government to weigh in, isn't that correct?

Mr. SIKES. Absolutely, yes.

Ambassador WOODS. Can I add just one other thing to that. One of the things we most appreciate is that Judge Greene has already allowed the regional Bell Operating Companies to manufacture overseas and sell overseas.

Now, my understanding is that none of them have yet proceeded to do that, but even in the absence of the decisions reached by the Justice Department and submitted to Judge Greene on the basis of antitrust issues. In the absence of the recommendations, had they not allowed manufacturing to occur in the United States, then it would probably be more likely that we would see our companies locating their manufacturing facilities overseas and then 10 years or fifteen years or whenever the manufacturing issue was addressed, the U.S. companies would have their manufacturing located overseas and they would start importing back into the United States for their own use.

The good thing that is going on here is that we are addressing the issue now. We are addressing the trade implications of that issue now, as indeed, as I said earlier, it was not addressed, in the initial AT&T consent decree back in 1982.

Senator DANFORTH. Is the problem limited to central office switching equipment or is it broader than that?

Mr. SIKES. I think it is principally limited to that, because I think the bulk of the other markets are effectively competitive. I do not think a Bell Operating Company, for example, could manufacture handsets or key systems and then favor themselves, because the market is too competitive for that to be accomplished.

Now, there might be upper-end equipment that is essentially within the central switch that would be included in a definition of central switching or central office equipment, but I think that is the principal area that the real risk—where the real risk is.

I should also point out that freeing up the Bell Operating Companies in the information services area would allow some of the intelligence to come into the network and not force all the intelligence into the terminal equipment, and much of the terminal equipment we buy is manufactured overseas.

So, I think in the opening up of the information services area to the Bell Operating Companies, that could have a positive trade impact over time.

Senator DANFORTH. Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

Madam Ambassador and gentlemen, I thank you very much for your cooperation.

Our next panel will consist of Mr. Robert Bruce and Mr. Michael Borrus. Gentlemen, I welcome you.

Mr. Bruce, would you like to proceed first?

STATEMENT OF ROBERT R. BRUCE, PARTNER, DEBEVOISE & PLIMPTON

Mr. BRUCE. Certainly, Mr. Chairman. It is a great privilege to have this opportunity to present my views on several issues concerning American international telecommunications policy that I believe warrant close attention by the Subcommittee.

I have a rather lengthy statement that I hope can be included in the record.

Senator INOUYE. Your full statement will be made a part of the record.

Mr. BRUCE. Mr. Chairman, this is a time of very great turmoil in the international telecommunications arena. This is not only because of the spillover of divestiture and deregulation in the United States. It is a result of major shifts in telecommunications policy in other industrialized countries.

New telecommunications laws have been enacted in Japan and the United Kingdom; and there are major policy reviews underway in France, Germany, Canada and the European Commission, to cite only a few examples. These changing national policies are reshaping the legal and economic environment in which telecommunications and information services will be traded and exchanged internationally.

As you mentioned in your opening statement, the old international framework which had been based on monopoly provision of core services is collapsing. What will it be replaced by? That is, I think, the key issue.

Established international organizations like INTELSAT and the ITU are under virtual seige as a result of the changes. The U.S. has had a leadership role in establishing these international arrangements and in establishing INTELSAT. It has a leading role in the ITU. The U.S. must continue to take that leading role; however, it must help those institutions adapt to the changing environment.

There are three areas, Mr. Chairman, that I would like to address very briefly. The first is, what legal framework will evolve for new electronic services and how will our strategies in preparing for the WATTC, bilateral talks, and trade and services discussions help create that legal framework.

Second, I would like to talk briefly about our policies toward INTELSAT. Finally I would like to stress the importance of building new bridges between the interests of the industrialized and less developed countries in the area of telecommunications policy.

First, WATTC bilateral talks in trade and services, why is the WATTC important? As a result of liberalization in many countries, there are new markets opening up for electonic services. These new electronic services will form the infrastructure of the markets through which foreign exchange and securities and commodities are traded.

The question is, will the WATTC result in the creation of new market barriers that impede the expansion of these services in the years to come? Will these new services be regulated like telecommunications services? Will they be tariffed? Will companies doing business internationally be able to do business like a data processing company directly in France or in Germany, or will they have to enter into a correspondent agreement with a foreign PTT?

These issues are very important because they affect the basic terms and and conditions under which these new types of services will expand. There are a number of important questions that must be forced. For example, if a financial organization creates an electronic market for securities or commodities in which its customers negotiate with each other over that financial organization's own network of leased lines, will the foreign PTT take the position that that financial service company is a common carrier and insist that it be regulated like a common carrier?

These types of regulatory issues will be getting attention by national policymakers. They are going to be addressed in the WATTC discussions as well.

Now, what we need to do in the WATTC preparations is focus the attention of high level officials overseaas on the importance of the issues that are being faced in that forum. To date, the discussions have been handled by officials that have been going to the WATTC meetings over the years. There is little appreciation of the broad problems that are involved in WATTC relating to the intersection of telecommunications and trade issues.

We need to focus on fundamentals in those high-level bilateral talks. We need to share with foreign officials our views on what the

future role of the CCIT should be. We need to raise the role of bilateral talks in the process of creating new arrangements for future electronic services. We need to talk about the relationship of the new trade round—the talks on trade and services to the WATTC.

We may be heading toward an impasse in discussions on the WATTC; and we may have to look at some new strategy options which are outlined in some more detail in my statement.

Let me turn briefly to INTELSAT. Intelsat is facing a very difficult future. Congress has been much preoccupied with the issue of competition to INTELSAT from private systems. But the problems that INTELSAT faces are much broader.

Intelsat must restructure its pricing in response the changing price structure of international telecommunications services. It must look at new ways of acquiring satellite services for the future. It may need to separate more formally its role as an operational organization providing services from its regulatory roles.

This is a very tough agenda, and the U.S. must take a lead in dealing with it. The U.S. must raise these issues through the formal mechanisms that exist within INTELSAT but it must encourage informal discussions about Intelsat's future with a cross section of some of our key trading partners.

Finally, let me stress the importance of building revitalized ties with developing countries. This is important because we need the cooperation of those countries in reshaping international organizations the Intelsat and the ITU. There is a risk of a real cleavage developing between the interests of the industrialized countries and the developing countries in dealing with international telecommunications issues.

There are structural reforms underway in the industrialized countries that are important to developing countries. There are major policy reviews being undertaken also in India and Malaysia. We need to build bridges between developed and developing countries. We need to talk to the developing countries about the benefits of regulatory innovation. We can only do that credibly by encouraging greater financial assistance through the World Bank and other international aid agencies. Otherwise, our message about regulatory reform will not be a meaningful one.

Mr. Chairman, there is much more that could be said. I hope to have an opportunity to respond to any questions you have. Thank you very much.

[The statement follows:]

STATEMENT OF ROBERT R. BRUCE, PARTNER, DEBEVOISE & PLIMPTON

Mr. Chairman, it is a privilege to be invited to outline my views on issues of international telecommunications policy that I believe warrant close attention by this Subcommittee during this session of Congress.

At the outset, let me stress that these views are entirely personal in focus. They are based, in part, on my experience in government as General Counsel of the Federal Communications Commission from 1977 to 1981, where I was actively involved in addressing issues of international telecommunications policy. This statement also reflects my work for the past three years in a comprehensive review of telecom-

munications policies in eight major industrialized countries.[1] Although my perspectives have been substantially influenced by the broad range of users, policy organizations, and service providers with which I have worked during the course of this study, my remarks today are not those of any particular institution nor of any client of the firm of which I am a partner.[2]

I. SUMMARY OBSERVATIONS

This look by the Subcommittee at international telecommunications policy is appropriate and most welcome. Recent changes in U.S. domestic telecommunications policy are reverberating around the world. In response to a host of economic, political, and trade-related pressures, other countries are adopting new telecommunications laws or policies. Cumulatively, deregulation and divestiture in the U.S., new telecommunications laws in Japan and the United Kingdom, and major reviews of telecommunications policy in Canada, France, the Federal Republic of Germany, and elsewhere, are spilling beyond national boundaries to have a profound impact on the international arena in which services are provided. Surely, this is both a crucial and most auspicious time for a comprehensive review of U.S. international telecommunications policy.

The development of new communications technologies, and the much heralded merger of communications and the computer, are creating a wealth of opportunities for new services. At the same time, the reach and scope of new technologies—satellite, for example—are blurring long-respected distinctions worldwide between national and international services. Not just in the U.S., but in other countries around the world, new carriers and new service providers are emerging domestically and internationally. To set the rules of the game in the new, more competitive environment that is developing in some countries, regulatory institutions or mechanisms are being created.

Other pressures are coming from users of domestic and international telecommunications services. They are demanding the regulatory flexibility to fuse communications and information processing and to integrate them into their transnational business activities. Major shifts in the regulatory environment in one country—whether it be the U.S., the U.K., or Japan—are having major economic effects elsewhere. Competition in domestic and international services is forcing the price of those services to move closer to costs. And, facing these changes in pricing outside their borders, national administrations and carriers are becoming increasingly rivalrous, each seeking to lure lucrative international telecommunications traffic to their shores.

The old order in the international telecommunications arena had been based on the monopoly provision of service and on agreements among the monopolies. Now, established arrangements for providing international telecommunications services are under great strain. Indeed, the changes and factors of the last decade are inexorably causing the collapse of this ancient regime.

Institutions must adapt their roles to these pressures and to the new realities of the international environment. This observation would certainly apply to Intelsat as well as to the International Telecommunications Union ("ITU")—which has been, through its working organ, the International Telephone and Telegraph Consultative Committee ("CCITT," from the French "Comite Consultatif International Telegraphique et Telephonique"), one of the major mechanisms for discussion among na-

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[1] This study was undertaken under the auspices of the International Institute of Communications, a London-based, nonprofit study institute, in collaboration with a group of diverse entities, representing users, providers of telecommunications service, and policy organizations. A report on the first phase of this Study of Telecommunications Structures was published last summer as R. Bruce, J. Cunard, M. Director, *From Telecommunications to Electronic Services: A Global Spectrum of Definitions, Boundary Lines and Structures.* A second phase of the Study will be completed later this winter. The organizations that have participated in one or both phases of the Study are AT&T Communications (U.S.), BellSouth (U.S.), British Telecom (U.K.), Cable & Wireless (U.K.), Citicorp (U.S.), the Commission of the European Communities, the Department of Communications (Australia), the Department of Communications/Teleglobe Canada (Canada), the Department of Telecommunications (India), the Direction Générale des Télécommunications (France), the Federal Ministry of Posts and Telecommunications (Federal Republic of Germany), IBM (U.S.), Iniziativa Me.T.A. of the Montedison Group (Italy), Intelsat, Japan Information Processing Development Centre, MTV Oy/Taloudellinen Tiedotustoimisio/Nokia Oy (Finland), Nippon Telegraph and Telephone (Japan), Reuters (U.K.), and the Société Internationale de Télécommunications Aéronatique (France).

[2] The Subcommittee should note, however, that I have rendered advice to several clients on issues relating to the 1988 World Administrative Telegraph and Telephone Conference about which I will have some observations in Part II.

tions on the structuring of international services. The challenge for policymakers in the United States is to take the lead in modifying existing institutions and arrangements—which have been at the very center of U.S. policy—to adapt them to the changes in the international environment.

This morning I will address three areas where a new focus and new initiatives may be necessary.

First, the United States must formulate a set of coherent and coordinated policies to encourage the rapid development of electronic information-based and financial services on a global basis. These services are critical to the ability of U.S. corporations to operate on a multinational basis. They constitute, as well, an important and high-growth sector in which the opportunities available both to U.S. entities and to users worldwide might well be hobbled by unduly restrictive foreign or international regulations.

It is imperative, therefore, that U.S. policymakers at the highest level consult actively with their overseas counterparts on how best to devise the international framework in which such services will be provided. In particular, officials in the United States, with their colleagues abroad, must address both the opportunities and the grave risks posed by the 1988 World Administrative Telegraph and Telephone Conference ("WATTC") that will be held under the auspices of the ITU. In the now-ongoing preparatory process for the WATTC, many administrations are seeking to develop a comprehensive framework for international telecommunications and telecommunications-dependent services; whatever results may be achieved, the WATTC will determine the future role of the ITU and, in particular, the role of the CCITT. Will the CCITT "regulate" by providing the underpinnings for national regulation of a wide array of services or will it be a more flexible forum in which national representatives assemble to discuss how new services can be offered internationally?

In determining what should be the arrangements by which new electronic services will be provided, U.S. policymakers also must focus on the role of bilateral consultations and on the new GATT round. In light of the enormous importance of the services sector for the U.S. economy, one of the highest priorities must be the meshing of telecommunications policies and umbrella policies on trade in services.

The second area of discussion concerns Intelsat. There have been many changes since the signing of the Intelsat Agreement—technological developments, shifts in regulatory policies, and increased pressure for adopting cost-based pricing for international services. A far-reaching reappraisal of Intelsat by the signatories to the Agreement, including the United States, would, therefore, be appropriate at this time.

The changes in the international environment will force Intelsat to revise its pricing and marketing policies, to reassess its approach to designing and procuring international satellite facilities, and, perhaps, even to reform its institutional structure. On this last point, and more specifically, Intelsat may wish to establish a sharper demarcation between its operational and its regulatory roles. Moreover, the United States and other signatories need to take a hard look at the mechansim by which their views are represented in the Intelsat organization. They must work to ensure that Intelsat is responsive to the complexity and new dynamics of the international telecommunications market.

The third set of issues revolves around the relationship between changes in the industrialized world and the impact of those changes on the developing world. It should be one of the cornerstones of U.S. international telecommunications policy that we become more attentive to the concerns and needs of the less industrialized nations.

Policymakers throughout the industrialized world need to explain in detail their shifts in policy—especially changes affecting Intelsat, the ITU, and international pricing policies—to telecommunications administrations in developing countries. The changes in industry structure in the developed world—proposals to separate the provision of facilities and services or to create autonomous entities to provide service—do have relevance to administrations in the Third World. Only if officials make long-term efforts to discuss these changes and their relevance to the less developed countries can they manage the dire risk of ideological cleavage, which might otherwise be founded on misunderstanding.

Given the need to change the roles of both Intelsat and the CCITT, it is essential that the industrialized and developing countries cooperate closely. The very nature of those institutions means that it is imperative that the developed and developing countries talk seriously about the international issues and problems that they all face. A failure to do so could polarize or fragment entirely the organizations themselves.

Finally, policymakers in both the industrialized and the developing countries can collaborate to increase investment in the telecommunications sectors of the Third World. Consultations among national economic planners, mutilateral development agencies, and the private sector can facilitate the development of greater opportunities for trade in both telecommunications goods and services.

II. THE IMPORTANCE OF DEVELOPING A FRAMEWORK FOR NEW ELECTRONIC INFORMATION-BASED AND FINANCIAL SERVICES

A. Emergence of New Services, New Categories.—Not just in the U.S., but in several other major industrialized countries, governments are moving forward to liberalize telecommunications policies.

Generally speaking, liberalization has not meant that newly authorized competitors can construct new networks of transmission facilities. (So-called facilities-based competition has emerged, however, in such disparate environments as the U.K., Japan, Canada, Australia, and Finland.)

Rather, new national telecommunications policies are permitting a more flexible use of the networks by end users or by a class of entities that combine telecommunications and other technological capabilities (such as switching or data processing) to provide integrated services to others. These new providers of service are described variously as offering "value-added" services (United Kingdom, France, the Netherlands), as offering "enhanced servcies" (United States, Canada), or as having "Type II" status (Japan).

The welter of new players and new services has meant the development of new regulatory categories, as well. There is, at present, no international consensus on how to regulate providers of "value-added" services at either the national or international levels. Thus, a U.S.-based "enhanced service" provider operating in a country where that nomenclature or definitional category is not used (and, indeed, may not even have a parallel) could well face both great opportunities and significant barriers. The plethora of categories and regulatory schemes has left, in the balance, important questions about whether or how services will be regulated. Beyond national regulatory regimes, however, how, given the trend worldwide toward easing restrictions on the use of transmission facilities, will such services be established on an international basis?

The dynamics of the telecommunications sector has made it difficult to grapple with these issues. Banks, data processors, information providers, or other service providers may offer new electronic services where telecommunications is an integral part of, but only one component of, a service; the service can fairly be characterized not as telecommunications but as either banking, the supply of information, or brokerage. Under national laws or the policies of the ITU, the status of providers of such services, wether U.S.-based or not, is uncertain.

The questions faced by such organizations can be formidable. In fact, restrictive policies or national attitudes could foil the offering of new services on a national or international basis. A major bank or other financial institution might, for example, create an electronic market for commodities that allows its customers, who are located around the world, to negotiate with each other through its own network of international leased circuits and computers. Should national regulators view that service as "telecommunications," as arguably in competition with the national telecommunications administration and, therefore, subject to telecommunications regulation such as filing tariffs, or might they not prohibit it altogether?

At the international level, should the service be viewed as the resale of international communications lines—a practice barred under the "recommendations" of the CCITT? Administrations point to these recommendations as justification for implementing restrictive policies that might prohibit the offering of the new service. Alternatively, should the offering be classified as an electronic brokerage or trading service for the institution's clients? Must the institution offering the service enter into a "correspondent agreement" or a rate settlement agreement with a foreign administration? Alternatively, might it be able to do business directly in the same, relatively unhindered, fashion as companies providing remote access data processing services internationally?

This example of the electronic commodity brokerage service may seem relatively straightforward. One would think that the service would be readily distinguishable from a "telecommunications" service that might be subject to regulation. Nevertheless, even in those countries where telecommunications policies have been "liberalized," the United States and other providers of new electronic services face a substantial risk of becoming entangled in regulations that are both unduly restrictive

and unnecessary to protect the integrity or sovereignty of the national telecommunications sectors.

The electronic commodities brokerage service that I have described is only one of a myriad of new electronic-based activities. The crucial questions facing domestic policymakers concern where and how these new services fit in the regulatory schemes developing at the national and international levels. In brief, the issue is whether the activities are primarily "telecommunications" or should be classified as part of another business sector.

This question of classification is not merely one of academic interest for international lawyers. It is of supreme importance for U.S. companies—and for their international competitors—seeking to provide new services on a global basis. For, regulatory classifications determine the very terms and conditions by which they will be permitted to carry on their business beyond national borders. The answer to this question will, moreover, have a profound impact beyond the telecommunications sector itself: it will shape the future of new markets for electronic publishing and electronic financial services.

B. Processes for Working Out Legal Framework.—In parallel with addressing the issue of what should be the regulatory framework for new services, U.S. policymakers must focus on the equally perplexing set of issues concerning the institutional or structural means by which that framework should be developed. A range of options is available to the United States. The issues might be first discussed on a bilateral or limited multilateral basis among the countries that have taken steps to liberalize the use of their telecommunications networks; such discussions might be held between the United States, the United Kingdom, and Japan. Alternatively, the issues might be raised in a broader, more comprehensive multilateral setting such as the CCITT.

At the outset, I would like to stress the tremendous importance of multilateral processes such as the CCITT. The CCITT cannot be bypassed; nor should it be. Nevertheless, the major shifts in telecommunications policy that are now underway on a global basis have trickled down to the CCITT process only very slowly. The reason for the disjunction between national policymaking and the CCITT mechanism lies in the fact that policy changes are initiated and implemented at high, frequently political levels. Often, however, those who participate in the CCITT are lodged in the engineering side of national administrations; they may be out of step with new thinking influenced by economic or marketing concerns and generally are not involved directly in policy debate. Conversely, for top-level policymakers, CCITT issues are seen as arcane and far too complex to follow routinely.

As critical as is the CCITT for the telecommunications sector—for telephony, telex, telegraphy, and for the standardization of protocols internationally—its institutional competence does have its limitations. Its strength in the telecommunications sector has not equipped it with capabilities to deal with new, related areas of business activity. Yet, as I have noted earlier, the boundaries between telecommunications and other sectors are eroding, if not collapsing; it is, therefore, difficult to determine where "telecommunications" regulation is appropriate. Faced with this difficulty, the institutional proclivity of the CCITT is not to stay within known metes and bounds. Instead, it is inclined to move into new territory, to stick a regulatory flag into its newfound turf, and, only later, to survey the terrain.

This inclination on the part of the CCITT might lead to like treatment of new services and established services such as telex or telephony. Nevertheless, for the just-emerging services it is absolutely essential that the relatively restrictive policies that have been applied to the international telecommunicaitons infrastructure should be jettisoned in favor of a less traditional, more flexible approach. Rules for entry and for the provision of new electronic services must be clearly aligned with that of an open international trading system. A uniform, CCITT-promulgated norm is not in the interest of entities providing new electronic services.

Flexibility in approach is also indicated by the multiplicity and growing divergence of national telecommunications policies. What had been the international consensus on industry structures and regulatory arrangements has not been shattered. Accordingly, it is just not realistic to think that a single set of international regulations could be developed for the new services, let along implemented. National policies are unsettled and in the midst of a tumultuous period of transition. Consequently, the only practical way of establishing a new international regime may be to weave a fabric of relationships on a country-by-country basis.

In this process, multilateral forums such as the CCITT can still be important. The results of bilateral discussions—or discussions among smaller groups of countries with similar interests—can point to regulatory approaches or solutions to a common set of problems. In a broader multilateral forum, the product of those discussions

can be shared with other nations. Any multilateral interchange would highlight, moreover, the inevitable fact that there is no one right solution—but, instead, a spectrum of approaches—to structuring new service arrangements.

C. Approaches for U.S. Policymakers: The Need to Coordinate Policy Initiatives.—What do these changes, these regulatory approaches, these different mechanisms for addressing the tumult in the international telecommunications environment mean for U.S. policymakers?

Above all, they mean that the coordination of the various activities that implement an international telecommunications "policy" must be improved. Until very recently, the responsibility for dealing with what seemed to be three separable issues—with the WATTC, with bilateral talks with key telecommunications partners, with negotiations over trade in services—had been quite compartmentalized. Different bodies within the government—the Department of State, the Department of Commerce, and the Office of the United States Trade Representative—addressed these issues; there has been, of course, some consultation among policymakers in these government units and consideration is given to the strategic links among the differing spheres of responsibility.

Now, there is a much more effective dialogue among State, Commerce, and USTR about these three areas of interrelated activities. The demands of the future, however, will require an even more vigorous effort to draw together the different strands of the U.S. international telecommunications policy apparatus.

Specifically, policymakers must decide how to coordinate the three areas. By way of example, one issue of immediate concern is the relationship between preparations for the WATTC and our government-to-government bilateral talks. Some U.S. policymakers are concerned that bilateral talks with our major telecommunications partners will unsettle our preparations for the WATTC. They argue that bilateral talks should be deemphasized to avoid aggravating CCITT participants by implying a lack of U.S. commitment to multilateral processes.

As we prepare for the WATTC, such concerns strike me as misplaced. As I explain in greater detail below, the failure to initiate high-level consultations to include discussion on the WATTC specifically, will substantially diminish the prospects of achieving a CCITT regime that will permit a flexible and open set of arrangments to develop. U.S. policymakers, in planning for the WATTC, must first align our policies on new services with our major telecommunications partners. Countries that have authorized value-added or enhanced services must be at the forefront of a coordinated effort to address the international framework in which such new services will be provided.

Concurrently with attempts to reach a substantive understanding with the other nations that have liberalized their environments, we must explain the importance of bilateral talks and how such inter-governmental negotiations can work together with the CCITT. In these bilateral consultations, we should stress that the CCITT may well be a useful place for exchanging views and sharing regulatory approaches. That is, we should also emphasize that a negotiation-oriented, "trade" model is likely to be more effective and acceptable than a "regulatory" model that lays down a uniform set of principles.

A key element of preparation for the WATTC, then, must be to engage in bilateral consultations. At this point, many participants in the CCITT process are open to the possibility that new approaches—including a trade model—and arrangements are necessary for addressing the regulatory issues raised by new services. Others, however, resists any departure from the approaches that had been developed for telephony and telex. The U.S. must, however, press for a more innovative approach to addressing these issues—not only in the course of its bilateral discussions but also in exploratory talks on the ways in which telecommunications and information services will be dealt with in the new GATT round.

Further questions of how to develop and coordinate an international telecommunications policy are now moving to the front burner with the onset of the new round. With the inclusion of trade in services and, specifically, telecommunications and information services in the new round, the United States must take a look at how to initiate the discussions on telecommunications-related issues. Initially, the issues have been addressed by focusing on a broad set of principles for the talks—what has been described as a framework agreement. Beyond the framework, however, the U.S. must also accelerate the process of identifying specific issues and problems in the telecommunications sector.

The rubric of "telecommunications services" encompasses a multitude of quite different business sectors; these would include, for example, the provision of facilities as distinct from the offering of information-related or electronic financial services. Difference approaches may be required for the issues presented by each of these sec-

tors. Thus, critical to any success in the GATT round will be a discussion of the issues with some degree of particularity beyond the framework agreement, an effort that will require policymakers to identify the different types of telecommunications-related activities.

Some of our trading partners—particularly the Canadians—have paid far more attention to sector-specific issues than have our policymakers. The U.S., however, has begin to focus on sector-specific issues. Under the leadership of the USTR, for example, a background paper on telecommunications services was drafted for the telecommunications consultation held last summer between the U.S. and Israel in the framework of the Declaration on Trade in Services, to which the two nations had agreed as part of the agreement on the United States-Israel Free Trade Area.

The government-wide preparation for the initial consultations on telecommunications services with the Israelis, undertaken with the assistance of the private sector, was a major—and highly useful—exercise in directing the attention of policymakers to the fact that the telecommunications sector is comprised of a range of different activities. The USTR and the other agencies must be given the resources to continue to keep abreast, if not ahead, of our trading partners; however, the private sector must be mobilized to contribute its part as well.

Again focusing on the coordination of what appear to be disparate international policy initiatives, it is important that trade policymakers look at the relationship between the talks on trade in services, the CCITT process, and the WATTC. Not much attention has been given to the important issue of how the GATT and ITU processes should relate. The significance of this question once more focuses on the fact that procedural issues must be addressed at the same time as policymakers deal with such substantive issues as specific policies or trade barriers. That is, it is likely that the question of how discussions should be structured—on a broad multilateral basis or through regional or bilateral talks—is closely linked to the substantive objectives of U.S. policy.

The CCITT process and trade in services negotiations may, of course, overlap now and in the future. Such overlap is not necessarily undesirable, however. Institutional rivalries at the international level—between the CCITT and GATT—may assist in sharpening the perspectives of policymakers around the world on how to develop a new framework for electronic information-based and financial services.

To assist in removing barriers to the development of global markets for new electronic financial services, U.S. officials responsible for issues of market access in the telecommunications and financial services fields will have to work together closely. For, such services generally are subject to at least two tiers of regulation: one relating to the telecommunications infrastructure over which the services are provided, the other being the financial (or other) regulation of the service itself. Responsibility for these two areas is divided between USTR and the Department of Commerce, for telecommunications issues, and the Department of the Treasury, for financial services issues.

(Similarly, responsibility for consulting with various administrations overseas in the market access fact finding ("MAFF") and market opening sector specific ("MOSS") talks has been divvied up among various entities—the FCC, the Department of State, and the Department of Commerce. To achieve the objectives of U.S. policy in opening up foreign markets, it is essential that the talks be approached with precision and consistency.)

To date, there has not been much dialogue among USTR, Commerce, and Treasury over how to open markets for U.S.-based providers of electronic financial services. Perhaps of greater concern, however, is the apparent reluctance to deal with the issue of market entry for electonic financial services in the broader framework for negotiations over trade in services. Assuring that key government departments are anticipating and not merely reacting to emerging trends faced by newly emerging electronic financial services should be one of the more important functions of the oversight process.

D. A U.S. Strategy for the WATTC.—The objective for U.S. Policymakers should be to assure that the CCITT process, and the WATTC preparatory activities in particular, do not result in any hindrance to the development of potential new markets for U.S. financial institutions. If the U.S. hopes to affect the course of this process to achieve its goal, there is not much time for delay. At present, U.S. Policymakers are intent on negotiating changes in the proposed regulations that are now on the table. The odds are strongly against any resolution of differences that would be favorable to our interests. Consequently, our current posture is that we face the bleak prospect of "compromising" on the draft regulations or taking exception to the final set of regulations.

To avoid just such an impasse, we may need to try a different tack in the WATTC preparatory discussions. Although it would represent a shift of direction, we should try to convince our telecommunications partners that it may not be necessary, or even a good idea, to try to effect a comprehensive new rewrite of the international telecommunications regulations. Instead of the present activity, then, we might suggest trying to develop a consensus that the existing regulations should simply be amended to take into account only the changes that are clearly required.

Beyond these limited changes, however, we should make every effort to persuade other countries that a review of the future role of the CCITT—and its relationship to the GATT round and bilateral talks—is necessary. Such a review should precede any overhaul of the existing regulations. It will be far from easy to implement this initiative; however, increasingly, many countries are becoming concerned that the WATTC may result in a confrontation that could ultimately weaken the CCITT process itself. Thus, the U.S. may well be successful with an approach that stresses the need for incrementalism, that emphasizes the utility of further discussions on how to treat new services, and that, above all, is sensitive to the fundamental differences of view within the international community over the national and international scope of the CCITT regulations.

These observations suggest, then, that the U.S. should now embark on a series of steps in connection with the WATTC preparatory process. First, the broad policy issues raised by the attempt to develop a uniform set of international regulations in the context of the WATTC should be front and center on the agenda of our high-level talks with other countries. Second, policymakers should address concertedly how to mesh the bilateral talks and the CCITT process. Third, the U.S. should focus less on the technical aspects of the proposed new WATTC regulations than on the more fundamental policy issues at stake: what is to be the role of the CCITT for new. Fourth, we should ask our major trading partners to consider the relationship of the GATT talks to the CCITT process. Fifth, we should endeavor to assure that future telecommunications-related regulation does not have an adverse impact on the development of services in such telecommunications-dependent sectors as financial services.

In short, we need to move decisively and immediately to engage the attention of high-level policymakers around the world. We need to urge them to reevaluate their policies toward the WATTC in light of changes in telecommunications policies in their own countries and elsewhere.

The process of high-level inter-governmental consultation on the WATTC is only just beginning, however. These talks must be coordinated on a more centralized basis than has been the case with the MAFF and MOSS talks. For example, the various departments still appear to have some unresolved differences on issues such as the relationship of the bilaterals and the WATTC. This Subcommittee, therefore, should both oversee and commend the initiation of high-level bilateral discussions on the WATTC.

E. The Need for Consultation and Information.—At a time of enormous changes in national and international policies, I cannot stress how important it is for U.S. policymakers to consult actively with their counterparts around the world. In the past, the lack of inter-agency coordination was viewed as the primary problem with U.S. international telecommunication policy. Today, the principal focus of attention should be on the mechanisms by which U.S. interests are represented abroad by the various agencies in collaboration with the private sector.

Having an active U.S. presence internationally is not to suggest that government officials should be involved in an intrusive way in working out the details of all future business relationships through inter-government agreements. Instead, business interests will have to create the arrangements that will form the new international framework.

Government still has a most important role to play, however. Officials must supply the strategic vision of how the international sector is to develop. To do this, U.S. policymakers must be much better informed than they are capable of being at present. Far greater resources must be devoted to gathering information on changes in telecommunications policy abroad. We spend billions on intelligence for our national security; however, we allocate only meager resources to gather intelligence and for analysis in fields that are absolutely vital to our national interests in economic security.

In particular, the various departments of the government need additional resources to ensure that mid-level and senior officials can participate on a frequent and active basis in international gatherings. The best way to carry our message overseas, to influence international developments, is through dialogue and discus-

sion; by contrast, the leverage available through regulatory or trade sanctions, though crucial, is limited.

We can only persuade based on a detailed understanding of the telecommunications priorities and policies of our important trading partners. We need to explore how to supplement the institutional expertise of the government departments that must deal with issues of international telecommunications policy. One way of doing so might be to develop programs to second staff to an array of telecommunications-oriented organizations in the public and private sectors.

We should encourage the development of telecommunications expertise in our representatives overseas by posting telecommunications specialists to some of our key embassies. Our major trading partners have already taken this step; indeed, some of their telecommunications experts, who have been assigned to embassies in Washington, probably are in this room today.

We cannot preach from afar. Personal contacts are all important in conveying our views to policymakers in other countries. Furthermore, the processes that sculpt the international telecommunications regulatory environment are incremental, at best. Thus, the highest priority should be given to devoting substantial resources to enhancing our long-term capabilities to explain, if not promote, our policies abroad.

III. THE FUTURE ROLE OF INTELSAT

Intelsat is in the midst of a turbulent international environment that is much changed from that existing at the time of its creation. These changes are the result of a host of factors: new industry structures and competition policies at the national level, developments in fiber optic cables and satellite technologies, and corrosive pressures on established pricing for international services. Cumulatively, the new environment virtually demands that the United States and the other countries that have played the lead in the international satellite organization take a fresh—and far-reaching—look at Intelsat's role. Thus, much of what I have already said about the need for a comprehensive approach to developing international telecommunications policy applies as well to U.S. policy on the future of Intelsat.

In recent years, U.S. policymakers have been entangled with the former Director General of Intelsat in a rancorous controversy over U.S. policies favoring the establishing of private satellite systems that could compete with Intelsat services. This bitter dispute resulted in a severe polarization of the signatories to the Intelsat Agreement. On one side stood the United States, advocating competition; on the other were arrayed Intelsat and many other countries, particularly those in the Third World, rising to defend the concept of an integrated global satellite network.

Unfortunately, this highly charged debate has deflected attention away from changes in the international arena that will have a significant effect on Intelsat's future. Insufficient attention has been paid to the need to reappraise Intelsat's role in light of these changes.

The rapid development of submarine fiber optic cable systems, for example, then, as now, represents more of a challenge to Intelsat's pricing policies than any competition from private satellite systems. Although fiber optic cables and satellite technology are viewed as complementary, there is no question but that significant traffic now carried by Intelsat can and eventually will be shifted to digital fiber optic cables once they come on line in the next few years. No matter how much they try, however, Intelsat and its members are unlikely to be able to block, or wall off the organization from, the competitive economic pressures that are resulting from such cables.

By consulting with its members, Intelsat can begin to devise policies to respond to the new environment. It has started to do so in inaugurating new services and new tariff structures. In the future, it can move more aggressively to meet competition from other satellite systems and from fiber optic cables by reassessing the structure of its international rates to develop a set of prices based on cost. Such new tariff structures will influence users' choice between the fiber cables and satellite technologies.

By moving to new prices that are related more closely to costs, Intelsat will need to move from its uniform, globally averaged pricing policy. To meet competitive challenges, Intelsat will reduce the price of services on the North Atlantic and other high-volume routes. The almost inevitable result will be that prices will increase on certain thin-route traffic streams between the industrialized and developing worlds and between countries in the Third World.

Any proposed changes in this direction will produce substantial friction within Intelsat. It will create pressures for a piecemeal or more ad hoc approach toward the restructuring of prices. Any such ad hoc approach, however, is unlikely to con-

stitute an adequate response to the problems faced by Intelsat. Indeed, in my view, such "incrementalism" could provoke a far graver crisis for Intelsat later on.

Instead, Intelsat must develop a set of comprehensive proposals for restructuring its rates worldwide. Such proposals should be exposed to widespread comment and discussion. If, as expected, the proposals are perceived as threatening to wreak a hardship on countries in the developing world, policymakers can then openly explore mechanisms to provide direct subsidies to minimize the disruption caused by new price structures.

Intelsat may face other difficulties in addressing disputes over how it prices its services. An Intelsat member or other interested party might allege, for example, that changes in Intelsat's pricing are anticompetitive or are not justified by the costs of a particular service. As competitive pressures in the international arena intensify, it is increasingly likely that Intelsat will be faced with such claims. To rebut such contentions, Intelsat may be required to open to the public its costing methodologies and accounting systems. Such steps, moreover, should increase the likelihood that disputes over pricing can be settled with less strain on Intelsat's institutional fabric.

The separation of Intelsat's regulatory and operational responsibilities is another reform that might defuse criticism of the organization. Under Article XIV(d) of the Intelsat Agreement, Intelsat must take determinations with respect to technical coordination with other satellite systems offering international services. The Article also requires that Intelsat assess the economic impact of separate satellite systems on its global activities. In addressing those issues, Intelsat is placed in the awkward position of having to act as an arbiter of its own institutional interests in preserving its essentially monopoly position and the interests of one or more of its members.

(In the national environments of the U.K., France, Finland, and the Netherlands, policymakers are noting the difficulties of combining regulatory and operational responsibilities in the same organization; the separation of these roles is an integral part of a national policy to open a monopoly environment to competition. The national rationales for taking this important step in regulatory policy may also apply to Intelsat.)

In general, Intelsat may want to assess how it might establish more open procedures for dispute resolution in areas where it has regulatory responsibilities. The separation of Intelsat's regulatory and operational roles may increase confidence in how it performs its regulatory functions. Such separation would increase the probability that decision makers charged with sensitive competitive issues—controversies over rates and the coordination of private satellite systems, for example—will not be persuaded by their own institutional biases to maintain Intelsat as the preeminent provider of global services.

Another institutional reform that may assist Intelsat in meeting competitive challenges is aimed at improving the quality and flow of information on which it makes its decisions on pricing, resource allocation and procurement. Many Intelsat members are otherwise reluctant to share sensitive business plans and data with an organization that may perceive those plans for new fiber optic cable systems as injurious to its own economic well-being. The separation of Intelsat's business planning function from its responsibility for long-term facilities planning may ease these concerns.

Various groups and organizations have expressed some concern about "overbuilding" the international facilities infrastructure. They claim that private and national satellite systems, and private and administration-supported fiber optic cable systems, together will inevitably produce a glut of international telecommunications capacity. Should it appear that such a glut might actually develop, the "solution" would not be in a few centralized planning process centered around Intelsat. No global regulatory process, even assuming that it were possible to create one, could effectively rein in the many—and autonomous—national and regional centers of decisionmaking that affect the process by which the international facilities infrastructure is created.

In lieu of a centralized process, it may be possible, however, to improve the flow of information and market signals among the many organizations in the international arena that are engaged in planning new facilities. Intelsat's role in this exchange of information is essential. Its effectiveness and credibility, however, is, once again, tied to the separation of its institutional roles; if its role in the long-range planning process is insulated from those functions targeted at gaining a competitive edge, members should have less hesitation about using Intelsat to share planning information.

Intelsat does need to get closer to the pulse of the international market. Right now it must deal through intermediaries with some of the largest users of the inter-

national satellite system. The representational process was developed in an era when services were provided on a monopoly basis by carriers or national administrations. Now, however, the international telecommunications scene has a new group of entities that provide value-added services to third parties. Intelsat has no means of interacting directly with these companies. Intelsat is also removed from any direct dialogue with the new national organizations charged with making policy or with the regulatory entities that will be shaping international policies.

In effect, therefore, Intelsat has been isolated from direct contact with some of the key players on the international scene—almost as if behind an oriental screen. This insulation is a product of both historical representational arrangements and national laws that set out the mechanisms for such arrangements. U.S. policymakers and their colleagues worldwide need to revisit these arrangements carefully if Intelsat is to remain effective.

Another possible option that policymakers might usefully explore is converting Intelsat into a broker for satellite facilities. Today Intelsat only acquires complete new satellite systems from satellite manufacturers. In the future, however, it might begin to procure satellite facilities from national or regional satellite organizations to provide international services. In this way, Intelsat, could act as a clearinghouse between suppliers of services and end users.

How can U.S. policymakers go about exploring some of these several options? In doing so, they face a difficult challenge. The issues can be raised directly within Intelsat. First, however, the United States must hammer out its own policy. In that process, U.S. policymakers need to consult a representative cross-section of our telecommunications partners in both the industrialized and developing worlds. Perhaps the problems besetting Intelsat, and any possible solutions, could be discussed in a new, more formal process that might be instituted within Intelsat on an inter-governmental basis. In addition, however, it might also be productive to assemble a group of public and private sector entities from several countries on an *ad hoc* basis to examine options for Intelsat's future.[3]

The difficulties facing Intelsat have no clearcut solutions. Thus, U.S. policymakers should not enter discussions about the organization's future role with any fixed ideas or preconceptions. It will be important for us to engage in consultations in the very real sense of that term.

As the United States approaches any such consultations, however, it is important to understand one last point. That is, the question of Intelsat's future is not necessarily one of the highest priority for policymakers in other countries. Thus, it is urgent that the United States make an effort to alert others to the significance of the pressures facing Intelsat and to work toward intensifying interest abroad in the prospects for the organization. The United States will, therefore, undoubtedly have to seize the initiative to begin a brisk and open dialogue on the future of Intelsat.

IV. FOCUSING ON THE PRIORITIES OF THIRD WORLD ADMINISTRATIONS

The preceding observations have focused on the need for new policies and approaches toward important international institutions: the ITU (the CCITT in particular) and Intelsat. Both organizations face difficult periods of transition and adaptation. U.S. policymakers must take the lead in forging international policies and need to make the case for changing established arrangements and procedures. They must venture forth to explain to other administrations the nature of the forces that are inexorably changing the international environment and, consequently, that require the adoption of new policies.

The United States has a good and very simple reason for encouraging others to understand changes in national telecommunications policies worldwide, and of the impact of these changes on the international arena. Such understanding is especially important outside the relatively small circle that comprises the set of industrialized countries. The United States and other industrialized countries are isolated in Intelsat and the ITU. Thus, we must actively develop support for our views on the changes that are necessary for those arrangements that we deem vital to U.S. interests.

It is of paramount importance that we do all we can to minimize the risk that administrations in the Third World will view changes in policies in the industrialized countries as driven merely by ideology; there is a significant risk, however, that

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[3] The second phase of the Study of Telecommunications Structures, for example, includes a paper on the future of the international facilities planning process. This paper, which was presented to the diverse group of entities participating in the Study, *see* note 1 above, might be one starting point for such exploratory talks.

administrations outside the industrialized world will perceive such changes as entirely irrelevant to these problems that they face.

To gain support for our policies, we will repeatedly need to stress that institutional restructuring of the telecommunications sector to foster efficiency is relevant for countries in the development stage. Ample support for this view can be found in changes taking place in the developing world. In both India and Malaysia, for example, new corporate entities have been created to bolster efficiencies, develop accounting methodologies, and as financing vehicles to attract investment to the telecommunications sector.

These structural changes in countries in the Third World are complemented by new regulatory policies elsewhere in the developing world that are intended to encourage value-added services. In short, the developments in the industrialized world go well beyond being merely relevant to the developing countries: indeed, it seems that telecommunications regulators worldwide are now facing a common set of issues. At the same time, of course, U.S. policymakers must be mindful that there are vast differences in perspective and experience between the industrialized and less developed countries.

U.S. policymakers should encourage an active dialogue on the contribution that a vigorous telecommunications sector can make to overall growth in the economies of the developing world. Economic planners in the Third World need some convincing that an investment in telecommunications should be given priority over other critical social needs such as food, sanitation, and education.

An understanding of the relationship between telecommunications and the rest of the economy could pay substantial dividends for countries in the industrialized and developing worlds alike; collaboration between telecommunications experts from the developed and less developed countries could promote investment in the telecommunications sector. One important consequence might be to expand opportunities for suppliers of equipment and services based in the developed world.

Ultimately, the United States cannot, by itself, preach to the Third World about the benefits of structural changes and flexible telecommunications policies. The process of innovation and change in the developing world must be assisted by programs to increase investment in the telecommunications sector. Thus, U.S. policymakers should actively support the efforts of the World Bank and outer multilateral agencies that can offer both resources and advice on industry structure. Indeed, together with other industrialized countries, the United States should urge the World Bank to expand its current activities in the telecommunications field.

Investment in the telecommunications sectors of the developing world can yield important benefits for the U.S. Those involved in development programs at the national and international levels must be prodded into according the sector higher priority. Ultimately, talk is just not enough. U.S. Government financial support for the ITU's Center for Telecommunications Development has been scant to date. If the United States and the rest of the world, are to realize the benefits of developing the telecommunications infrastructures of the Third World, they will have to make a fundamental new commitment to channel substantial new resources into development programs.

V. CONCLUSION

International telecommunications policies are of great strategic and economic significance for the United States. Existing policies and existing international institutions must become more responsive to the new international environment. The United States has had an active role in shaping these arrangements and in creating those institutions. The signal importance of the changes taking place commands that the U.S. take an equally active role in formulating new policies for the decades to come.

Consequently, it is essential that this Subcommittee focus its energies on issues of international telecommunications policy. Increased attention by this Subcommittee will heighten the visibility of the issues in the Executive Branch agencies and at the FCC. Concededly, it may well be difficult to organize the various pieces to form a coherent policy or to increase the coordination of the current government policymaking apparatus.

Efforts by this Subcommittee to formulate an international telecommunications policy, however, may help to contribute to enhanced growth and efficiency in the telecommunications sector, both domestically and globally, and in the other sectors that are becoming so dependent on telecommunications. Over the coming years, those sectors will represent a huge proportion of the GNP of the U.S. The vigor of those activities may also determine the extent to which the U.S. will be able to

maintain its lead in providing services to the world. Thus, today's hearing may well launch a process that could produce immeasurably great long-term benefits.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

Mr. Borrus.

STATEMENT OF MICHAEL BORRUS, DEPUTY DIRECTOR, BERKELEY ROUNDTABLE ON THE INTERNATIONAL ECONOMY, UNIVERSITY OF CALIFORNIA

Mr. BORRUS. Thank you, Mr. Chairman. I too have submitted extended comments for the record.

Senator INOUYE. Without objection, it will be made part of the record.

Mr. BORRUS. I want to try and add a little context by picking up on some of Mr. Bruce's opening comments; I think a congenial context to the remarks I have heard from the Committee this morning.

I have five points to make. I am going to run through them very quickly and then go back and spend just a little time on several of them.

My first point is that there is a major transformation going on in the industrialized economies in the way that goods and services are produced. Telecommunications is one of the leading edges of that transformation. How successfully we as a country navigate that transformation, how competitively we adjust, will largely determine our standard of living and our place in the world economy in the future.

My second point is that the United States, by a variety of measures, is not adjusting particularly well in this transformation compared to our strongest competitors. One grave relative weakness is the erosion of the domestic U.S. manufacturing base. It is grave for telecommunications no less than for the rest of the economy.

Manufacturing matters. I do not believe it is possible to become a prosperous—emphasis on "prosperous"—service economy without a strong domestic manufacturing base.

My third point is that because telecommunications is thus so extremely critical to the changes going on, it has become the focus, as Senator Hollings among others suggested this morning, of industrial development policies in Japan and Europe as well as in the rapidly industrializing countries of East Asia.

My fourth point is that the impacts of those domestic development policies, of their self-conscious promotion of competitive advantage not only in telecommunications but in the industries which use telecommunications, are being experienced as trade disputes in the United States. This leads to my fifth point, that the U.S. needs to fashion a coherent and anticipatory strategic response now in order to avoid the problem of ad hoc responses later on.

Let me briefly go back and touch on some of those points. The changes going on in the world economy are being driven by an intense increase in international competition, particularly other countries competing with those industries the United States has dominated for many years, and by the application of new technologies throughout the production of goods and services.

In that sense I think international telecommunications in addition to the views that have been expressed earlier and will be expressed later, ought to be understood as at least in part a series of national stories about competitive economic performance in the world economy.

The successful competitive development and production of telecommunications, i.e., a healthy and competitive domestic U.S. industry, as well as the successful competitive application of telecommunications to industrial production of goods and services throughout the economy, are strategically critical to our relative wealth and power.

It is a question of whether, as the changes in the world economy occur, we can adjust competitively enough to earn the incomes necessary to sustain our commitments in the world. And as I suggested, by a variety of measures, whether one looks at investment rates or productivity growth rates, the character of job creation real income levels, our status as a debtor nation, the deficits we have been running and the rather dismal prospects for future increases in our standard of living at least over the next 15 years or so, the way the United States is adjusting makes for somewhat bleak reading. It has been made bleaker, in my view, in the last six years.

One of the industries that is doing better than most is, of course, U.S. telecommunications. Where it is strong, it provides some guidance for U.S. adjustment. Where it is weak, it exposes a number of problems.

I mentioned before, the U.S. manufacturing base being eroded. That is a problem for the U.S. telecommunications industry in part because U.S. manufacturing is a big user of U.S. telecommunications services. So, manufacturing is important for telecommunications as well as for economic development. I can say more later.

The countries like Japan—and my submitted testimony looks closely at Japanese telecommunications—have chosen to focus their industrial development policies in this area because they recognize its strategically critical nature. They have focused their policies on promoting an internationally competitive domestic telecommunications industry and are promoting the application of telecommunications.

In my view, a coherent response to the trade problems that are likely should be made up, one part of trade policy, one part of science and technology policy, and one part of regulatory policy.

Let me stop. I can say more if there are questions.

[The statement follows:]

STATEMENT OF MICHAEL BORRUS, DEPUTY DIRECTOR, BERKELEY ROUNDTABLE ON THE INTERNATIONAL ECONOMY [BRIE], UNIVERSITY OF CALIFORNIA, BERKELEY

Suppliers of telecommunications services, producers of communications equipment, and major users of both services and equipment, are fashioning radically new, digital telecommunications networks in the industrialized countries. Those networks, in their public and private forms, are a critical component of economic infrastructure. The new digital networks move the information which is increasingly critical to competitive production of goods and services in the world economy. They are the electronic equivalent of the roads and rails which constituted the infrastructure for industrial economies centered on physical transport. Correspondingly, the telecommunications industry must today be broadly understood to encompass the provision—for information networking—of terminal, transmission, switching, control and data base equipment, and voice, data, video, and facsimile services.

Understood in this way, digital telecommunications technologies and the industries which create and use it are one leading edge of a broad change in the U.S. economy. Our work at the Berkeley Roundtable on the International Economy suggests that the U.S. economy is experiencing an extremely troubled adjustment to a period of profound and difficult industrial transformation. The application on a mass scale of microelectronics-based automated production and communications technologies, and the vastly increased exposure of the U.S. economy to international competition, are fundamentally altering the mode of production of goods and services throughout the economy. A new industrial economy will result, vastly different from the simple vision of a post-industrial service economy: Our work suggests that in the absence of an enduring manufacturing base, services alone cannot sustain continued growth in the American standard of living. Manufacturing matters in this transition, and it is in manufacturing that the United States has lost its competitive edge.

Indeed, there is growing evidence that the United States is not managing the industrial transition as successfully as our toughest international competitors, particularly those in Asia whose governments play a substantial role in promoting domestic economic development and creating competitive advantage on world markets. Our trade deficit in electronics—despite two years of a declining dollar—including the large $2 billion trade imbalance in the telecommunications equipment, is one indication. If we are losing position even in leading edge hi-tech sectors like communications where our technology and know-how should permit us competitive advantage in world markets, then there is obvious cause for great concern—and an obvious need to rethink the strategies behind the business and policy practices.

The telecommunications industry is pivotal to U.S. industrial adjustment because of its enormous size, and even more critically, because the widespread application and use of telecommunications throughout the rest of the economy can generate the advantages that will keep U.S. goods and services competitive in world markets. The application of digital telecommunications in the factory and office makes possible radical product and process innovation. Old industrial activities can be transformed, and new ones created. For example, innovations in American finance from the Automated Teller Machine to customized insurance policies, rely on sophisticated information networks: New product development time at firms like IBM and Hewlett-Packard has been cut radically by the use of integrated communications services. Similarly, the ability to sustain production in traditional industries from textiles to autos depends upon the flexibility automation provided by the application of digital communications to manufacturing.

In essence, the telecommunications industry and the new networking infrastructures that are emerging, are powerful agents of economic growth and competitiveness. They create jobs throughout the economy, support domestic economic development, and generate the potential for enduring competitive advantage for U.S. industries in international competition.

However, these impacts of digital telecommunications are not the result of isolated choices made by business firms. Government regulatory and administrative decisions about telecommunications within each national setting, provide critical determinants of firm choice and technology impacts. Indeed, there are several different national regulatory and trade policy approaches being taken to foster the dramatic strategic potential of the new telecommunications. At the extremes of these approaches lie the United States and Japan. The break-up of the Bell System, the privitizing of Bell Labs, domestic deregulation, and the lack of strategic trade policy, all characterize the U.S. approach. In Japan, by contrast, Nippon Telegraph and Telephone has been privitized though not dismembered, market competition has been introduced, but tight regulatory control aimed at fostering competitive position for Japan on world markets still continues—a condition I call Japanese "developmental re-regulation".

Because the different policy approaches in the United States and Japan will matter mightily to relative economic performance and to the competitive position of national firms on world markets, a comparative understanding of the two national approaches is necessary. After briefly characterizing the U.S. approach, I will spend some time detailing Japanese policy and practice. Thereafter, I will draw conclusions for U.S. policy.

DEREGULATION IN THE UNITED STATES

The U.S. has chosen to deregulate—to let competition in the market meeting major user needs drive the evolution of communications. The withdrawal of policy in the United States has had critical impacts, opening the United States to foreign

competition and creating a wide-open and highly unstable domestic market. Driven by competition, digital network integration is occurring more rapidly than in Japan and Europe. Access to and use of almost all enhanced business communication services including electronic messaging, on-line text processing, video- and teleconferencing, and data-base services, is far more widespread in the United States than elsewhere. A similar rapid development is evident on the equipment side of the industry, where U.S. per-capita use of communications equipment is some two and a half times higher than in Europe, and almost twice as high as in Japan.

Deregulation has also uniquely altered the structure of the U.S. industry. Even as ATT, the local Bell System remnants, and independent telcos move to digitize the U.S. PSTN, interexchange carrier networks, private bypass networks, integrated office and factory networks and value-added networks (VANS) have proliferated in the United States. These developments have brought with them an expanding market for communications equipment, accounting for some $25 billion or between 40 to 50 percent of world consumption. Given the relative size of the now open U.S. market, foreign producers are maneuvering to position themselves to challenge the market dominance of ATT and other domestic U.S. firms.

Japanese producers have been notably successful; their exports of telecom equipment to the United States have grown remarkably since divestiture, topping the $2 billion mark in 1986, and accounting for the majority of the U.S. telecom trade deficit. Under that kind of competitive pressure, U.S. producers led by ATT have been forced to become far more multinational in character, turning their attention to foreign markets to make up for foreign inroads into the United States. Yet, these efforts have been costly and frustrating, because the major foreign telecommunications markets in Europe and Japan are still relatively closed to U.S. producers.

Overall, then, digital network integration is emerging rapidly in the United States as a result of efforts in the market to take advantage of deregulation. At least over the short run, the largest users in the United States are likely to gain the advantages associated with integrated digital services ahead of their competitors abroad. However, the distinctive pattern of deregulation in the United States has also had costs which the more cautious approach in Japan may well avoid (see below).

Those costs include a hierarchically accessable and fragmented national network infrastructure which threatens through rising prices to disserve the needs of small business and residential users, consequently, a slower development of integrated digital services for small business and residential users, and a wide-open domestic market that leaves U.S. producers vulnerable in international competition in the absense of reciprocal market access abroad. An equally critical cost has been the loss of Bell Labs as a source of publicly available research and development in new technologies. To contrast the U.S. experience with a more strategic approach abroad, we turn now to examine the Japanese case.

JAPANESE TELECOMMUNICATIONS AND DEVELOPMENTAL RE-REGULATION

Past Developmental Regulation.—Until April, 1985, Nippon Telegraph and Telephone (NTT) was Japan's domestic, public, common carrier communications monopoly. Since its formation in 1952, NTT—nominally under the direction of the Ministry of Posts and Telecommunications (MPT), and explicity so since April 1985—has engaged in joint R&D and systems engineering to develop microelectronics, software, optoelectronics, and network equipment for Japan's public-switched communications infrastructure with a favored 'family' of major Japanese electronics companies (normally, NEC, Fujitsu, Hitachi and Oki, but others like Sumitomo Electric depending on the particular product). As part of this function, NTT continues to run nine very advanced electronics R&D and systems engineering laboratories, many of which are noted the world over for the extraordinarily high caliber of research (e.g. NTT's Atsugi Microelectronics Lab).

NTT has helped to develop and finance pilot and mass production systems for manufacture of the products jointly researched and developed. Crucially, NTT has procured high volumes of equipment and systems at premium prices from its family companies. It has even engaged in direct export-finance. These kinds of activities serve both to make demand highly predictable and stable, and, critically, to subsidize price competition for the Japanese firms on export markets. Since NTT-supported equipment development and production operates with the equivalent of a subsidy, the resulting equipment need not be priced to recoup fully allocated development costs in export markets. Because most competing U.S. equipment, subject to private market constraints, must be priced to recoup total costs, U.S. producers are

at an inherent disadvantage on world markets when competing with NTT's suppliers.

Of course, all of NTT's developmental activities have been largely closed to foreign firms. Indeed, until the 1980 United States-Japan Agreement on NTT Procurement, the Japanese market was formally closed to foreign producers. It bears emphasizing here, that the consequences of exclusion from the Japanese market have been severe and cumulative for foreign competitors.

First, exclusion has meant the loss of the profit opportunities that finance R&D necessary for development of next generation products. Exclusion also has meant a loss of opportunities to realize economies of scale that bring down costs and determine competitive position in world markets. Second, Japan is an advanced market, the scene and permanent innovation and refinement in telecommunications technology and manufacturing. The only way to stay abreast of technological change in Japan is to be present in the market. But perhaps the most important reason for being in the Japanese market is that the absence of sustained foreign competition there has given Japanese companies a critical advantage in international competition. In telecommunications today, as in steel, autos and consumer electronics in the past, Japanese success on world markets has rested on the ability of Japanese producers to move rapidly to volume production with limited risk in a domestic market insulated from foreign competition.

In essence, then, NTT's industrial policy role has enabled favored Japanese telecommunications companies to develop and commercialize new technologies in a protected and subsidized, risk-minimalized way. With NTT coordinating common standards development and allocating markets among its favored family, Japanese producers often developed a small number of related product families that shared common components and subsystems. Economies of scale could thus be achieved in component and subsystem production, while flexible (and often automated) production facilities achieved economies of scope in manufacturing the related product families. The result has been lower overall production costs. When combined with procurement from NTT in high volumes at premium prices, the costs of the resulting equipment have been driven to or below world levels, enabling rapid competitive penetration of world markets by major Japanese firms. As data processing and telecommunications have converged, NTT has emerged as a critical element in Japanese electronics development.

There are numerous examples of the impact of NTT's developmental role in helping to establish Japan's telecommunications equipment producers as world class competitors. The example of fiber-optic light-guide is illustrative. In the early 1970s, Corning Glass held generic patents on the production of light-guide and attempted to register its patents in Japan prior to moving into Japan through licensing or export (as it did in Europe). The patent applications were administratively stalled in Japan for ten years. During that time, NTT entered into a crash development program with its family of favored cable producers, Sumitomo, Furakawa and Fujikura, to develop a different mass production method for light-guide, the vapor-phase axial deposition (VAD) method. NTT then entered into high-volume, premium-price procurement at levels far above its own immediate needs. This forced Japan's cable producers to reach a scale of production that brought their costs below world market levels, created excess capacity destined for export, and provided the profits to subsidize price competition on world markets. Indeed, in 1983, Japan's total fiber market was estimated at about 60,000 fiber kilometers while Japanese producers had an estimated production capacity of 575,000 fiber-km; and NTT was paying Japanese producers a price some three to four times higher than they were selling at in the United States. Today, the Japanese industry is a highly competitive world class producer of light-guide.

Japan's Changing Situation.—Changes in NTT's role are occurring, however. It has been almost 2 years since the Nippon Denshin Denwa Kabushiki Law (the new NTT Law) went into effect in April, 1985. On that date, NTT became a private company, initially held 100 percent by the Government, which began at the end of 1986 to sell off the first block of 12.5 percent of NTT stock (with the approval of the Diet, up to two-thirds of the shares may eventually be sold). Critically, no foreigners or foreign companies will be permitted to buy stock, although a Japanese company held less than 50 percent by foreign interests will be technically eligible as a shareholder. NTT is now one of the largest companies in Japan, with about $60 billion in assets and annual revenues topping the $28 billion mark.

Procurement by the new NTT accounts for about 45 to 50 percent of Japan's total domestic telecommunications equipment market, valued at about $8 billion in 1986. Roughly another 10 to 15 percent of the market is accounted for by purchases of other governmental or quasi-governmental institutions (including Japan's small

international carrier KDD, the Japan Rail and Highway authorities, the Defense Agency, and local governments). The private sector thus accounts for about 35 to 40 percent of the total telecom equipment market in Japan, virtually all of which is open market purchases of interconnect terminal equipment. In 1986, Japanese producers exported an additional $3 billion of equipment, bringing domestic Japanese telecommunications equipment production roughly to the $10 to $11 billion level.

Of course, this total equipment market has been mostly closed to foreign firms, with NTT controlling technical approval of both network and interconnect equipment. From the signing of the U.S.-Japan Agreement on NTT procurement in 1981, NTT procurement from foreign firms rose steadily, if not dramatically, from about $15 million in 1980 to about $180 million in 1983-84. The United States-Japan Agreement was renewed for three years in December, 1983, and again at the end of 1986. It was hoped that the renewals would help more fully to open the Japanese market to U.S. suppliers. With a few highly visible exceptions, there has been only marginal progress. Early in 1986, after a 5-year negotiation effort, Northern Telecom became the first foreign producer successfully to crack NTT procurement for central office digital switching equipment, with a 7-year contract valued at about $250 million.

Yet, total imports of U.S. communications equipment have been stagnant in yen terms since 1983, remaining roughly at the 31 billion yen level. It is in this context that the new NTT law gains added significance: As the government's ownership of NTT is reduced over time, it is possible that NTT's procurement will fall gradually out from under the coverage of both the United States-Japan Agreement and the GATT Code on Government Procurement. Indeed there appears to be a dispute on precisely this issue within Japan.

Continuing Developmental Promotion.—An equally critical question is whether NTT will continue its comprehensive developmental role for Japan's equipment producers. Interviews in Japan suggest that while change is occurring in NTT's relations with its former family companies, that change is very gradual. Even domestic Japanese companies with strong political and technical resources, but no prior affiliations with NTT, are finding it extremely difficult to crack the old family system. Indeed, current NTT projects suggest that its prior developmental role is continuing.

For example, the aim of NTT's ambitious Information Network System project (INS), is to create by the year 2000 a fully integrated, digital communications infrastructure for Japan, linked by broadband fiber optic cable and microwave equipment. INS is Japan's full-blown vision of ISDN. In essence, INS aims to put a digital, broadband infrastructure in place in anticipation of its uses, while simultaneously developing those uses through model programs and pilot projects targetted at business and residential users. As the Commerce Departments JTECH review of Japanese telecommunications technology affirmed, INS is a remarkable engineering prototype which will succeed in giving the Japanese an edge in understanding and developing products for future telecommunications applications.

NTT is extending a fiber-optic trunk network that was put into place over the past two years, with plans to have 60 to 70 percent of the total trunk network fiber optic in 10 years. NTT also intends to move aggressively to revamp the local loop network by installing fiber-optics and digitizing it as part of the INS evolution—with perhaps 10% of local exchange lines fiber-optic within a decade. Since September, 1984, NTT has operated fully digital, model INS systems in the Mitaka-Musashino and Kasumigaseki areas of Tokyo. By April 1985, about 600 individuals and companies were taking part in the model experiment. Several parallel projects—some of them implemented in pilot form in the model INS—are also underway to develop equipment and services that can take advantage of the INS infrastructure. These include interactive visual communications networks (NTT's Video Response System or VRS) integrated voice-data and voice-video equipment, optical scan document terminals and fast mini-faxes, and optical instrumentation and control systems for industrial and office applications.

It is estimated that the entire INS project will require between $80 to $120 billion in investment over the next 15 years. Estimates of the markets for INS-related private investment and products (including terminal equipment and software) approach $250 billion. Given the huge size of these markets, INS offers enormous leverage for NTT to continue its developmental role to the advantage of Japanese producers. Since the INS project began, NTT has worked almost exclusively with favored Japanese suppliers to develop the current and next generations of equipment and software necessary to implement INS. This has occurred despite demonstrable superiority held by U.S. and other foreign producers in many of the advanced technologies required.

Equally as important, INS and related projects provide a vision to galvanize the efforts of Japan's major electronics firms in their development of new generations of interconnect and network equipment. NTT's current research and development activities span a spectrum of core future technologies. These include broadband switching and transmission, satellite and portable digital communications systems, to super-high speed data processing, automated software production, artificial intelligence processing technologies (e.g., natural language translation and understanding), and the internetworking of dissimilar equipment, not to mention ultra-large scale integrated circuits and optoelectronics.

INS suggest that even after privitization, NTT's developmental role is continuing, at least for next generation network equipment and optoelectronics. However, there are also signals that in some areas that developmental role will be more limited than in the past, especially as NTT enters the market in competition with its "family" companies. Indeed, the seriousness of NTT's long-run commitment to competing against its former family members can be inferred from its aggressive expansion plans. Since April 1985, NTT has established some 35 newly affiliated companies. The tendancy toward diversification of NTT's supplier base, its commitment to a range of new businesses outside the scope of its ties to its former family suppliers, and the procurement contract to Northern, all suggest that opportunities for United States and other foreign firms to participate in NTT procurement may well yet emerge.

A critical variable in this regard will be whether MPT will push NTT to continue its developmental role, or permit it to continue to diversify its procurement. Paradoxically, the existence of common carrier and VAN competition to NTT appears to have strengthened MPT's hold on NTT, since it can use the excuse of competition as justification for continued regulatory intervention. Indeed, as the analysis so far indicates, continuing regulation with a self-conscious developmental intent will remain a vital part of Japan's telecommunications landscape, despite NTT's privitization. This is equally true with Japan's liberalization of competition in services, to which we now turn.

Services Competition.—The new Business Communications Law partly liberalizes common carrier communications and the VAN market in Japan, and even opens the latter to foreign competition. The law permits common carrier competition to NTT by Japanese nationals, but bars foreign owned or controlled corporations from the domestic common carrier market. The law also has opened the door to domestic (and perhaps foreign) competition in international telecommunications services, altering Kokusai Denshin Denwa's (KDD) status as Japan's sole tiny provider of such services. Of parallel note is an August, 1986, revision of the Radio Law which opens the land mobile services and radio paging markets to competition (perhaps even foreign, as Motorola has lobbied strenuously to participate).

Several new common carrier entrants have begun to build competing domestic networks, and several others are waiting in the wings. Table 1 summarizes these new competitors to NTT.

TABLE 1.—NTT'S COMMON CARRIER COMPETITORS

Carrier	Technology	Ownership
Daini Denden Kikaku (DDK)	Microwave	Kyocera, Sony, Ushio, Mitisubishi, Secom, 220 others.
Teleway Japan	Optical Fiber	Japan Highway Authority, Toyota, Mitsui, Sumitomo 46 others.
Japan Telecom	Optical Fiber	Japan National Railways, Nittu, Railway Construction, Nippon Densetsu, 300 others.
Japan Telecommunications Satellite Co	Ku-band Satellite	C. Itoh, Mitsui, Hughes Aircraft (30%).
Space Communications Corporation	Ku-, Ka-band Satellite	Mitsubishi, others.
Tokyo Telecommunications Network (TTNet)	Optical Fiber	Tokyo Electric Power, Mitisui, Mitsubishi.
Lake City Cablevision	Coasxial	Lake City Cablevision.
Osaka Media Port (OMP)	Optical Fiber	Osaka Municipality, Sumitomo, Mitsui, Mitsubishi, Kansai Electric Power, 25 others.

Source: Telecommunications Bureau of the Ministry of Posts and Telecommunications, New Era of Telecommunications in Japan.

Most of them initially are focusing on the lucarative Tokyo-Osaka route, which carriers about one-quarter of Japan's total telecommunications traffic, and accounts for about 40 percent of NTT's service revenues. DDK, Japan Telecom, Teleway and

TTNET all now offer leased line services, and may move to offer public switched services by the Fall 1987. The other networks are in planning or construction.

Just as has been the U.S. experience, it will take many years of careful nourishing before any of these new entrants become appreaciable forces in Japan's telecommunications market. However, their plans to build competing networks are already adding to Japan's growing network equipment market, creating a new source of non-NTT demand which appears to be somewhat more open to foreign producers. Sales of tandem switches, satellites, and even optical fiber have been made to the new common carriers.

The new Law also permits competition among foreign and domestic Japanese firms in enhanced communications services like VANs on lines leased from common carriers. These VAN carriers are further classified into General and Special carriers, the latter of which operate large-scale, mostly nation-wide VANs the capacity of which exceeds applicable MPT ordinances. As of December 1986, there were 10 registered Special VAN carriers, two of which had some foreign participation. The General VAN carriers—those which meet the applicable MPT limitations on size and area of coverage—numbered 304 as of January, 1987, of which about 10 were substantially under foreign control or affiliation. Some of these with American partners have also led to foreign equipment sales in Japan.

Overall, about 70 percent of the VAN carriers are engaged in data processing services, with the rest split evenly between voice, video and ISDN-type services. In terms of applications, about 70 percent are serving the retail/wholesale distribution trades, and another 10 percent are serving the financial sector. As a result of liberalization, the VANs market has boomed in Japan, reaching almost $3.5 billion by the middle of 1986, and growing at 20 percent per year.

Critically, entry in the VANs market is subject to regulatory control by MPT, in the form of either registration or "notification" requirements, depending upon the precise communications services offered. Thus, while entry into the VAN business is ostensibly deregulated, any potential entrant must either register or notify MPT of its intent to offer VAN services. Crucially, neither registration nor notification is self-activating; rather, they require a responsive action from MPT.

In effect, then, MPT permission to operate must actually be obtained, and continuing MPT oversight will be a fact of life in the Japanese VANs market. There are broad grounds in the new legislation permitting the Ministry discretion in approving or disapproving entrants to the market. Moreover, the requirements also apply to any changes in the services offered—thus, the Ministry retains the power to prevent the expansion of VAN operations. Hence, even though foreign firms are being permitted for the first time to offer VAN services on the Japanese market under the new law, MPT will have the final say over which firms offering what kinds of services are permitted to operate. This is an interventionist rather than merely regulatory power: MPT's decisions permitting or denying VAN operations will structure the VANs market in Japan. In the absense of strong pressure from outside Japan, it is not hard to envision the Ministry structuring that market, down the road as it gains experince with the new entrants, to the advantage of Japanese firms. Its continued power to do so suggests the degree to which re-regulation characterizes the liberalized market.

Developmental Reregulation.—Taken together, the new telecommunications laws and ambitious development plans described above, constitute a developmental reregulation of the sector which is quite extraordinary in its self-conscious strategy. In the past, compared to the United States, Japan has been relatively slow to develop new services and equipment—with the exception of facsimile. Digital data services were developed only in the 1980s, and digital equipment for, and installation in Japan's public phone network has similarly lagged behind developments in the United States.

However, Japan's current developmental re-regulation of telecommunications augurs drastically accelerated development of the sector in comparison to Europe. And it augurs a substantially faster nation-wide, broadband integration of digital communications—right up to each subscriber's door—than may well occur in the United States. If accomplished, Japanese small and medium-sized business users and home consumers will have substantially more complete access to a wider range of information services than will the Europeans and all but the largest U.S. users.

Similarly, the ambitious Japanese moves toward digital network integration, and continued regulatory control over foreign access to the Japanese market, are galvanizing the communications equipment efforts of Japanese producers. Drawing on optical and audio technology know-how—in which they are clear world leaders—Japanese producers will be formidable competitors to United States and European firms in a range of communications equipment. This will be particularly true in innova-

tive terminal equipment, optoelectronic components and transmissioin equipment. While Japan's much noted weakness in software will slow the success of Japanese producers on international markets for digital switching and integrated communications systems, the growth of the domestic Japanese market in these areas will provide important opportunities to leverage international position.

Re-regulation will also be accompanied by a continuing battle for policy control over development in the information industries between MPT and the Ministry of International Trade and Industry (MITI). The bureacratic battle has led to ambitious additional technology and product development projects under each Ministry's control and under joint control. A critical strategic consequence is a massively increased Japanese Government commitment to applied R&D in telecommunications—the benefits of which will be broadly disseminated throughout Japanese industry—at the same time that Bell Labs has been privatized, and its research largely denied to the U.S. industrial base.

The emerging strength of Japanese telecommunications producers and the international competitive advantages gained by broader Japanese industry resulting from access to advanced digital services, will continue to generate massive trade friction between the United States and Japan. This will be particularly so as long as Japanese strength is built in tight regulatory control over foreign access to the Japanese market. The United States-Japanese MOSS talks on telecommunications have reinforced market liberalizing actions taken for largely domestic Japanese political and economic development reasons. This means that there is an increasing need for continued strategic U.S. trade policy in this area—perhaps even for explicit actions to deal with the bi-lateral trade imbalance.

More broadly, a rethinking of U.S. R&D policy aimed at replacing the loss of Bell Labs is critically necessary. So too is the development of an equitable set of policies to ensure access by small and medium-sized producers and consumers to the most advanced communications services and equipment. Indeed, an industrial extension service, modeled after the agricultural extension, aimed at bringing advanced technology to traditional industries, is probably a necessity. In the end, it will be affirmative domestic policies that help to ensure the competitive position of U.S. producers on world markets: No amount of strategic trade policy can substitute for coherent domestic development and adjustment policies in an era of state-promoted international competition and industrial transformation.

Senator INOUYE. Thank you very much.

Mr. Bruce, in your prepared statement you discuss many ways for the United States to improve overseas activities. If you had to name two or three of them, what do you consider the most important and immediate steps that we should be taking?

Mr. BRUCE. It is difficult to hone in on one or two, however, first we need is a very focused strategy to deal with some very important developments in the international arena. I mentioned, for example, a strategy towards the WATTC which involves pulling together trade policy and telecommunications policy. That is a first order of priority.

Second, we have problems relating to the future of Intelsat that could grow very significant if they are not attended to promptly.

Third, we have spent a lot of time in past years focusing on the problem of coordination among the various relevant agencies. Assuring effective coordination continues, obviously, to be an important concern; however, many of these agencies are working very well together.

The key problem now is how effectively to represent U.S. interests overseas. We need to spend more time and energy getting our people out into the international arena. It is very hard to convert people to our position, sitting back here in Washington.

Senator INOUYE. So, you are suggesting we are not doing that?

Mr. BRUCE. We are beginning to do that in a process of bilateral consultations. It is a process that has to occur not only at a high level with our senior officials visiting senior officials among foreign

administrations. We also need to develop an infrastructure of to deal with international telecommunications issues. Senator Hollings mentioned the success of MITI. MITI's success is a result of a group of officials who have been dealing with international issues over the years. We need to invest in building up the experience and expertise of our experts in the international telecommunications field.

Senator INOUYE. How are we doing in WATTC?

Mr. BRUCE. Well, I think time will tell. As I said in my statement, I think there is a substantial risk that we could face an impasse in the WATTC. The outcome will much depend on what happens in the next months; and I think that a very intensive set of consultations at a very high level will be required.

To date those discussions have been at the working level, among the officials who have been working in the CCITT process over the years. What we need to do is make connections with the very senior level people in France, Germany, and elsewhere who are looking at policy changes. We need to explain to them why a more flexible approach to regulating new information services is in their interest as well as ours.

Such flexibility is a key to the future expansion of electronic based services, which I think are just beginning to development of internationally.

Senator INOUYE. Mr. Borrus, one of the most feared words in the language of trade as far as our competitors are concerned is the word "reciprocity." Will a law mandating reciprocity for telecommunications be effective in dealing with Japan, or with European countries?

Mr. BORRUS. It could well be. I think strategic trade policy that includes reciprocity is an important part of the response I spoke of.

Success, of course, always depends upon how policy is implemented. Major imbalances in trade, that is, surplus countries as well as deficit countries, slow down international growth.

Surplus countries take resources away from deficit countries, resources that could be used for domestic economic development. In that sense, a reciprocity bill which can be implemented multilaterally in the future, perhaps starting bilaterally now, and which aims at smoothing out trade imbalances in the world economy, would be a major step, I think, towards solving some of the problems.

I think reciprocity can be used to implement market opening abroad if it is used strategically and as part of a broader set of programs.

Senator INOUYE. Non-hypothetical, or perhaps it is hypothetical, let us assume that you have the authority and the power to do something and you were faced with this AT&T matter in France and AT&T does not succeed, what arrows would you pull out from your quiver?

Mr. BORRUS. One problem, of course, is that the reason AT&T will not succeed, if it does not, is the pressure the German government can bring in the context of France's purchase of ITT. ITT's largest facility and its best research and development facilities in telecommunications are all in Germany.

It is tough to go up against that. I think in part certain things can be done on the trade side, but equally as important would be to attempt to stimulate the competitive position of domestic U.S. industries like ATT, in particular through attention to and development.

I believe the privatizing of Bell Labs, for example, in the long run will come back to haunt the domestic U.S. industrial base. I think domestic development policies are at least as necessary as international trade policies in that sense.

Senator INOUYE. In other words, you consider this matter too tough for us to handle?

Mr. BORRUS. Well, unfortunately I am not privy to the discussions so I do not think any of my comments would be precisely on point. I think the Reciprocity Bill could give a certain amount of leverage. Unfortunately, France does not sell a lot of telecommunications equipment in the United States.

It is a tough specific situation.

Senator INOUYE. Senator Packwood.

Senator PACKWOOD. Well, Mr. Borrus, Senator Inouye gets you right up to the brink, and then you hesitate. Let us go back to Japan instead of France.

I have never read a paper that has more detailed knowledge about how Nippon is doing its privatization than your written testimony. As I understand your paper, you are saying they may privatize but they are still going to be controlled.

Tell us, because we do not want to make a mistake, we do not want to lash out incorrectly and end up starting a trade war that no one wins. What do we say to Japan? What do we do to Japan, if not mandatory retaliation, to give us a fair shot at their market?

Mr. BORRUS. I think in the end, some kind of limited—limited in time frame—use of a bilateral value-based quota that is based on a moving balance of the bilateral trade.

Senator PACKWOOD. You mean, not sectoral, but if they will not let us into the telecommunications market, they will have to reduce their trade deficit by three or four billion or whatever the amount of the deficit in communications is? So, yours would not be sector specific: if we cannot sell switching equipment they cannot sell Toyotas?

Mr. BORRUS. It could be sector-specific. It requires again a domestic assessment of which industries are more strategic than others in terms of economic growth.

I think telecommunications, as semiconductors, is one of those industries. In that sense I would look at the bilateral trade balance in telecommunications, put a ceiling on the value of Japanese equipment that could come in, not on the quantity but the value, and move that ceiling as the trade imbalance changed.

Senator PACKWOOD. But you would move it only if they are engaging in what we would describe as unfair competition? You are not just taking the trade balance; you are saying because it is unfavorable, we will put some limitation in?

Mr. BORRUS. No. I am saying that until U.S. shares of the Japanese market approach what U.S. shares are in open markets in competition with Japanese companies——

Senator PACKWOOD. You lost me there.

Mr. BORRUS. If we are not competitive in telecommunications, we do not want to be pushing the Japanese government just to buy uncompetitive products, or NTT; it will not happen.

If it can be demonstrated that U.S. companies are competitive, as they are in central office switchs, on other markets that are open, in competition with Japanese companies, then one has a measure that, in fact, U.S. product is competitive and ought to be bought in Japan on the basis of price and quality. Therefore, use the success of U.S. companies abroad as a measure of the degree to which they should penetrate the Japanese market as well.

Senator PACKWOOD. You mean, success abroad rather than in Japan? I am not quite following what you are saying.

Mr. BORRUS. In open competition with Japanese companies in other markets.

Senator PACKWOOD. All right, the Japanese versus the Americans in Australia.

Mr. BORRUS. Right.

Senator PACKWOOD. And to the extent that American companies succeed in getting 30 or 60 percent of the business in Australia, with Japan competing for that same business in Australia, we presumably could get 30 to 60 percent of the business in Japan?

Mr. BORRUS. It gives you a range.

Senator PACKWOOD. Now, if that is the range we are aiming at and we are unable to achieve it for whatever reasons, then are you suggesting, sectoral retaliation first but not limited to sector, or what? Is it mandatory? Do we pass legislation to compel the President to do it?

Mr. BORRUS. Obviously it has to be limited according to a calculus of the other trade problems that exist at the time. On a bilateral sectoral basis, I would use the limitation on the value of Japanese product coming into the U.S. market, not on the quantity.

Our trade policy generally looks at orderly marketing agreements, quantity-based limitations, quotas and the like. Those have not worked. In fact, they lead precisely to the opposite of what they ought to. I would use a value-based ceiling which moves as the trade imbalance changes. If Japan's surplus grows, I would lower the ceiling. If Japan's surplus——

Senator PACKWOOD. Are you saying in the particular equipment?

Mr. BORRUS. Yes.

Senator PACKWOOD. Well, that sounds very much like Senator Danforth's bill.

Mr. BORRUS. Yes. I think it is a wise approach.

Senator PACKWOOD. Thank you. No further questions, Mr. Chairman.

Senator INOUYE. How would you apply your formula to situations such as the reluctance on the part of the Japanese to open up their markets to beef products from the United States, citrus products from the United States? You know very well we can be more than competitive.

Mr. BORRUS. Again, I think one needs at the start of any strategic trade policies to try in some way to prioritize the sectors where the U.S. is competitive. Agriculture is a very important one. Japan is already our largest export market in agriculture. There are

limits to the extent to which they are going to be willing to take greater agricultural commodities.

I recognize that setting those priorities will be, at least in part, a function of politics. We do not have a MITI-like bureaucracy in this country, and I do not think we want one, but priorities have to be set. In my view, it is more important to open up Japanese markets in those leading edge technologies which are critical to future economic growth than it is to gain the marginal growth in agricultural to use that particular example.

Senator INOUYE. Are there any markets we have closed to the Japanese?

Mr. BORRUS. Agriculture is one, but they do not export much. We do, of course——

Senator INOUYE. Are there laws that would prevent agricultural products from Japan entering the United States?

Mr. BORRUS. Agriculture is not my forte. We certainly have restricted Japanese consumer electronics products, Japanese textile products, Japanese steel, Japanese automobiles over the last 20 years, roughly, and perhaps now Japanese semiconductors as well.

We certainly do use trade policy in that way to restrict access, and I believe the most recent estimates——

Senator INOUYE. They have really succeeded, have they not, with all these restrictions.

Mr. BORRUS. Well, in part I believe that they have failed because quantitative limitations, limitations on the number of products that can come in, do not work. They do not work because if there is a limitation on the number of products you can bring in, then you as a foreign producer are going to bring in more highly valued products so you can make more money up to that ceiling. You are going to adjust toward the higher value added production which should be kept by the U.S. industry, given the fact that the U.S. industry has to pay higher wages.

Quotas create a perverse set of incentives. It creates incentives for foreign companies to adjust, and it defers U.S. adjustment because you are changing the price signals to the domestic industry. The U.S. industry now sees that there are higher prices in the market. It's less competitive production, higher cost production, suddenly appears to be competitive in the market. It does not need to make the changes that are necessary to stay competitive.

I think that is why those limitations have not worked in the past. That is why I emphasized value-based rather than volume or quantity-based limitations.

Senator INOUYE. Throughout this hearing, I have been trying to listen very carefully, and no one has used the two words "free trade," but oftentimes when you hear experts, they speak of free trade.

Is there such a thing as free trade in this world?

Mr. BORRUS. There are degrees, obviously. In my view, free trade was really a function, is still a function of the U.S.' ability to maintain open markets abroad, of the U.S.' willingness to absorb the cost of adjustment after World War II entailed in an open market as other countries become more competitive with U.S. production.

I am not certain we have the capacity to do that anymore. If we want to maintain open trade as a major policy in the United

States, we are going to have to maintain competitive industry in the United States. It is a double or nothing type of proposition, open trade and competitive industry.

In order to do that just as we did in the Nineteenth Century, as Japan and the newly-industrializing countries in Asia do, we may need to protect in certain areas, if I may use that word, because the only way to rebuild a competitive structure may be to buy the time necessary.

It is also true that in a range of different industries, new economic trade theory, suggests that free trade may not be the only thing that leads to optimal outcomes for the world economy. Under certain kinds of conditions, government intervention in the economy can be as optimizing of international economic growth as can markets in free trade. That theory is very much in its infancy, but free trade is not the only possible approach to organizing the world economy.

If we become weak enough because we fail to adjust competitively, the rules that will be made to govern the international economy will be made by states for whom free trade is not as high a priority. Therefore, the international economy that results will, I think, look very different than the one we have now.

Senator INOUYE. Mr. Bruce, Mr. Borrus says he supports the Danforth Telecommunications Trade bill. Do you support it also?

Mr. BRUCE. The difficulty is what kind of sanctions are to be available and who should exercise them. There are obviously some difficulties in having those powers in the hands of the FCC. The FCC has proposed in a recent notice to exercise its regulatory authority to achieve objectives in the trade field.

The difficulty is the FCC does not have much flexibility to respond to trade barriers overseas. If we need to have sanctions in order to secure open markets, and we do have to have them, they should be in the hands of an executive branch agency, particularly in the telecommunications area. Such sanctions must be used in a very flexible and subtle way. The whole field of trade in the telecommunications section is a complex one. We have been focusing on access to the equipment market. There are different issues raised in dealing with market access for telecommunications services.

So yes, the principles of the bill I would support.

Senator INOUYE. Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman.

Mr. Borrus, I am getting a little tired of the phrase concerning firing the arrows in the quiver. Do you feel that we have fired the sufficient or any arrows in the quiver as far as specifically the Japanese are concerned?

Mr. BORRUS. I do not feel as much has been done as could be done. Some of the approaches we have talked about earlier might create greater bargaining chips on the part of the U.S. I also think that this administration has shown a notable willingness to toss away bargaining chips rather than using them, as in the case of the Hudaille Industries machine tool petition in the early years of the administration. Findings that the Japanese had subsidized the domestic machine tool industry were essentially discarded rather than used as a bargaining chip to gain concessions in other areas.

There has not been much of a strategic approach to trade policy, in my view. Trade policy has been as disorganized as policies in other areas.

Senator McCAIN. I hope I am not being repetitious when I ask you perhaps you could outline some recommendations that you would have as far as some immediate action is concerned.

Mr. BORRUS. I think, assuming the Danforth Bill is passed, that will give a certain amount of bargaining chips. The problem is that one needs somehow to constrain the executive discretion to use those chips.

Senator McCAIN. Who is better qualified to exercise that discretion, the mandatory legislation which would trigger responses, or would you favor giving the executive branch flexibility?

Mr. BORRUS. Obviously flexibility is to be preferred.

Senator McCAIN. As long as they will use it. I have no further questions, Mr. Chairman. Thank you.

Senator INOUYE. Thank you very much, gentlemen.

Our next panel consists of Mr. Edward McKeever, Vice President, Marketing Operations and Support, AT&T International; Mr. George Fisher, Sr., Senior Executive Vice President, Motorola; and Mr. Kenneth L. Phillips, Chairman of Legislative Affairs, Committee of Corporate Telecommunications Users.

Welcome to the committee. Our first witness will be Mr. McKeever.

STATEMENTS OF EDWARD D. McKEEVER, VICE PRESIDENT, ASIA, PACIFIC, AND THE AMERICAS, AT&T INTERNATIONAL; GEORGE FISHER, SENIOR EXECUTIVE VICE PRESIDENT, MOTOROLA, INC.; AND KENNETH L. PHILLIPS, CHAIRMAN, LEGISLATIVE AFFAIRS, COMMITTEE OF CORPORATE TELECOMMUNICATIONS USERS

Mr. McKEEVER. Thank you, Mr. Chairman. Good morning.

AT&T participates in international trade in telecommunications in several ways. The first of these is the one that is most familiar to anyone who has ever placed a long distance call to someone in a foreign country. AT&T or one of its U.S. competitors furnishes that end-to-end calling service on a joint basis with foreign telephone carriers.

That service area is really not properly regarded as foreign trade as the term has been used this morning, since the U.S. and foreign carriers neither compete with one another, nor do they function in a kind of buyer and seller relationship. Instead, they function as a kind of partnership to insure that the customers in each country have the widest possible calling area. In our view, there are no issues here. This jointly provided international service works and works well.

AT&T also participates in international telecommunications trade through the sale of equipment to foreign telephone administrations. AT&T reentered these markets in the late 1970s after an absence of more than 50 years. We have made some progress here, but certainly we are not satisfied.

The factors which make success in this area difficult are numerous. A U.S. exporter of telecommunications equipment must first

contend with the obstacles that confront any U.S. exporter: currency fluctuations; exchange controls; local labor laws; and foreign business regulations of all kinds.

Second, equipment used in the telecommunications network has an unusually high custom engineering component. What we sell must be able to work with every other piece of gear in a foreign network. Custom engineering takes time and imposes substantial costs on the supplier.

A third obstacle is that most foreign countries regard their domestic telephone systems as a kind of valuable national patrimony which can provide a host of benefits to the citizens of their countries. The telephone system can be a source of jobs and technology, a key to national defense, and a source of funds to support other elements of a country's economic infrastructure.

This view of the telephone system complicates individual purchasing decisions, and frequently the foreign government imposes unusual and expensive requirements as a condition of sale.

Finally, in those countries which house a domestic telecommunications manufacturer and in which the overall economy receives substantially more guidance and direction than is the case in the United States, there is the incentive to give the domestic manufacturer a high priced sanctuary. This assures the domestic manufacturer high margins in his home market and permits him to offer extremely low prices elsewhere. The U.S. exporter is at a dual disadvantage—meeting the foreign competitor on his home turf, and meeting his low prices elsewhere.

There are three contributions we think the U.S. Government can make to succeed in trade and telecommunications. The first is stability in our home industry. The second is increased financing assistance to foreign governments who want to buy our gear, and the third is continued engagement in diplomatic trade negotiations to eliminate barriers in foreign markets wherever they appear.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF EDWARD D. MCKEEVER, VICE PRESIDENT, ASIA, PACIFIC, AND THE AMERICAS, AT&T INTERNATIONAL, INC.

Mr. Chairman, my name is Edward D. McKeever. I am Vice President—Asia, Pacific and the Americas at AT&T International, Inc., which oversees and coordinates international operations for AT&T. It is a pleasure for me to be here and to have this opportunity to present AT&T's views on the important subject of these hearings: international communications.

My testimony will describe the major segments of the international communications market, focus on some present concerns in international telecommunications trade, and lastly suggest to your committee some actions Congress and the Administratin might take to improve the current situation.

In any discussion of international telecommunications, it is important to clarify the important distinctions between the telecommunications service area and the telecommunications equipment trade area. The industries are structurally different from one another, competitive trends are not the same in services as in trade, and the issues to be considered are distinct. These distinctions must be kept in mind as we seek solutions to problems that exist.

Most international telecommunications services, including basic telephone service, are provided through joint arrangements between the entities in the respective countries. Unlike trade, U.S. carriers involved in the joint provision of these services are not in competition with foreign entities and do not seek direct access to customers in foreign countries. Therefore, traditional concerns about protectionism are not applicable in this area of jointly-provided services.

U.S. carriers participating in the joint provision of international services do compete with one another, however, for American customers using such services, and there is increasing competition in this area. In the market for switched voice service, for example, MCI and U.S. Sprint have added service to more than 50 countries around the world in the past several years. These countries include most of the large markets, the United Kingdom and Canada in particular.

In many service categories, competition has become so active among U.S. providers that the FCC has streamlined regulatory procedures for providing these services.

In addition to services jointly provided, recent trends toward privatization and liberalization of telecommunications policies in some major foreign countries are affording U.S. firms new opportunities to offer various value-added and information services to customers in these countries. The United Kingdom, Japan, the Netherlands and France, for example, seem to be following the United States in this regard, reducing the influence of politics, bureaucracy and regulation in the provision of telecommunications services and allowing competition and technology to determine what services are offered and at what price.

The provision of value-added and information services has been addressed in recent bilateral trade negotiations and is expected to be discussed thoroughly in the new round of GATT discussions. U.S. negotiators have been consulting closely with the industry on these issues.

While we should not minimize the task facing our negotiators in trying to establish a set of general principles for fair market access with respect to value-added and information services, the United States already has come a long way in developing foreign support for that objective. We are hopeful that the GATT negotiations will reinforce the positive movement well under way in major markets.

In short, it is AT&T's position that the international telecommunications services market is generally moving in the right direction. Although the market is not yet universally open and competitive, services are becoming more and more responsive to customer demand and less impeded by political considerations.

The telecommunications equipment trade presents an altogether different picture. AT&T—either directly or through joint ventures with foreign companies—markets a variety of sophisticated switching and transmission systems, customer-premises equipment, office products, electronic components, and software in overseas markets. At present, our products are sold in most major countries in the world, including nearly all industrialized nations. Our partners in joint ventures abroad include N.V. Phillips of the Netherlands, Olivetti of Italy and Lucky-Goldstar of South Korea.

The United States as you know, is the major player in the international economy, with exports and imports combined totalling some $700 billion annually. The United States exports some 20 percent of its industrial production, which also accounts for 20 percent of the country's GNP. The other side of this, however, is that, large as our exports are, imports far surpass them. One-fifth of all goods consumed in the United States are imported, and foreign countries are gaining larger and larger portions of our market.

Most alarming is the reversal the United States has suffered in high technology industries—electronics and communications, for example—which are characterized by intensive research and development. High technology goods comprise about 30 percent of our total trade in manufactured products and, historically, have generated a substantial trade surplus. By 1984, however, the trade balance had begun to shift and the surplus in high technology products fell to $4 billion. Last year we recorded a deficit of $3 billion in that area.

The significance of this negative turn in the high technology market is not so much because of the size of the industry or the number of jobs lost, but because technology traditionally has been one of our country's major strengths and capability in this area is key to our economic future.

The present situation in the telecommunications portion of high technology trade is of particular concern to AT&T. The U.S. has unilaterally opened its domestic markets to competition, while other countries have erected or retained unfair trade barriers. The result is that the telecommunications equipment market has changed dramatically in the last few years. In 1981, the United States enjoyed a $1.5 billion surplus in the telecommunications equipment area. Each year since then has seen further erosion of our position and last year, 1986, we realized a telecommunications trade deficit of some $2 billion.

Part of the reason for this serious reversal is that the impact of divestiture and the restructuring of the telecommunications industry on the telecomunication trade market was not well understood beforehand. The U.S. telecommunications equipment market was open to foreign competition before divestiture. But divestiture

broke the ties between t Bell Operating Companies (BOCs) and Western Electric, which until then was th principal supplier of most BOC equipment and products. While we do not oppose the opening of the U.S. market to foreign suppliers, there have been only rather meager actions by other governments to allow our manufacturers and suppliers to address foreign markets.

And now, with the effects of its earlier actions clear, and just as the turmoil in the telecommunications industry has begun to settle down, the Justice Department would compound the problem. The recent recommendations by the Justice Department to Judge Harold Greene would stand the AT&T Modified Final Judgment (MFJ) on its head, sweep aside the issues that led to the breakup of the Bell System, and further weaken the United States in international telecommunications trade. The Department's astonishing reversal, giving little weight to the anticompetitive dangers upon which it built its case against AT&T and the Bell companies just a few years ago, is matched only by its indifference to the trade consequences of its proposal to now allow the Regional Bell Operating Companies (RBOCs) into joint manufacturing ventures with foreign firms.

The Federal Government should be wary of simplistic approaches that could seriously backfire. While some suggest, for example, that lifting the MFJ restrictions on the RBOCs would unleash powerful new American competitors in the world telcommunications trade market, recent studies by both the NTIA and the Justice Department conclude that it is far more likely that, if given the freedom, the RBOCs would link up with foreign manufacturers, who would then undoubtedly receive the lion's share of the RBOC's purchases. The huge BOC portion of the U.S. telecommunications equipment market could thus effectively be foreclosed to U.S. suppliers.

The Government should not further disrupt the Nation's telecommunications industry, and certainly should not again take action without carefully weighing the repercussions on trade, jobs, and U.S. competitiveness.

What can be done to improve the U.S. telecommunications trade picture? First of all, we must recognize the central importance of telecommunications technologies in the United States and world economies. National defense, industry, commerce, finance, education, government and international cooperation all rely increasingly on state-of-the-art information technology. The United States can maintain its economic leadership in the world community only if we stay at the forefront of technological innovation.

With a strong technological base to build upon, the key to America's success in world trade—telecommunications equipment trade in particular—is open-market access and equal status among all trading partners.

Continuing trade deficits and the loss of American jobs to foreign countries have prompted a number of legislative proposals designed to improve the U.S. trade position. To be helpful to U.S. telecommunications companies, such proposals, as well as initiatives by the Administration, must seek fair market access for American companies in foreign markets.

Until AT&T and other U.S. manufacturers and suppliers are able to compete on equal footing with foreign companies on bids to supply network switching systems, transmission products and customers premises equipment on a free-market basis—as foreign companies do in the U.S.—the telecommunications trade picture will not brighten.

By way of a brief summary, it is AT&T's view that the trends in international services are generally positive. Jointly-provided services are expanding at a healthy rate and competition for U.S. customers is increasing rapidly. With respect to value-added and information services, major countries are now showing a willingness to depoliticize these services. Where issues remain, they will be addressed in the GATT negotiations, as they should be.

International telecommunications trade, like international trade generally, presents an altogether different picture. But the United States is by no means without resources to improve international trade. We can strengthen our research in science and engineering, and bring the results to fruition in superior technological innovation. More than that, government, industry and labor—and all sectors of our society—can work together more effectively than we do to revitalize American industry and reforge America's competitive edge. And, I believe, we can establish and carry out successful economic and trade policies that encourage foreign countries to pen their markets.

Thank you.

[The following information was subsequently received for the record:]

AT&T,
Washington, DC, March 26, 1987.

Hon. DANIEL K. INOUYE,
Senate Hart Office Building, Washington, DC.

DEAR SENATOR INOUYE: At your recent hearing on international communications you were kind enough to highlight the problems we have experienced in our offer to purchase a share of Compagnie Generale de Constructions Telephoniques. At the conclusion of the hearing you asked our witness, Edward McKeever, for a memorandum summarizing our efforts. Enclosed you will find that memorandum along with a collection of newspaper articles [1] concerning the acquisition.

Thank you again for your assistance. We will, of course, keep you and your staff apprised of developments.

Sincerely,

GERALD M. LOWRIE,
Senior Vice President.

Attachments.

AT&T AND PHILIPS TELECOMMUNICATIONS—FRENCH PROPOSAL

I. OVERVIEW

Since 1985, AT&T has been working with the French and discussing a variety of business opportunities. One of the primary items of interest was the potential acquisition of CGCT, a nationalized French telecommunications equipment manufacturer. Officials within the French PTT have been very receptive to AT&T's European joint venture—APT—pursuing the acquisition of CGCT because it would provide the PTT access to U.S. technology in the form of the #5ESS Central Office Switching Machine. In return for acquiring CGCT, APT would be awarded on the order of 16% of the French PTT Central Office switching market.

In 1986, CGE, another large nationalized French company, announced plans to acquire ITT's telecommunications manufacturing business. The largest and most profitable part of the ITT acquisition is their German subsidiary, SEL, which has approximately 30% of the German switch market. When the Germans discovered that the French were taking control of SEL, they began exerting political pressure on the French to award Siemens the right to acquire CGCT in the name of sectorial reciprocity.

The U.S. Government, through the Ambassador in Paris, Secretary Baldridge and Ambassador Yeutter, contacted French and German Government officials to express concern with the politization of the CGCT acquisition. As a result, the German government has backed off from pushing the French Administration into a political decision. However, Jacques Delors, Chairman of the European Commission, recently made a public statement in favor of Siemens. In addition, on March 18, Michel Noir, Minister of Foreign Trade, also made a statement in the media in favor of Siemens.

During the same period, the French Privatization Commission ruled that foreign ownership of denationalized companies like CGCT will be limited to 20%. This requirement causes all interested parties to partner with domestic French companies in bidding for CGCT. APT has developed partnerships with SAGEM and SAT, two French industrial companies, and with Compagnie Du Midi and Omnium Financier de Paris, two French financial institution.

The French tender for the purchase of CGCT has been responded to by four groups, namely APT, Siemens, L. M. Ericsson and Northern Telecom. The tender calls for the close-out of the sale of CGCT by the end of April.

II. PROPOSAL HIGHLIGHTS

APT's proposal consists of the following elements:

Purchase of CGCT for 500M FF.

Provide 5ESS-PRX switches to the French PTT/DGT on the order 16% of their annual requirements.

Purchase made in alliance with the following firms: SAGEM, SAT, Compagnie Du Midi, and Omnium Financier de Paris.

The 5ESS-PRX will be adopted to the French requirements.

Production and development will take place in France.

[1] The articles were not reproducible.

Industrial cooperation agreement with SAGEM in areas such as Telex and Teletex.

Industrial cooperation agreement with SAT in the telecommunications transmission area.

Industrial cooperation agreements with CGE/Alcatel NV as follows:

Formation of a joint venture (50% Alcatel/50% APT) to manufacture digital microwave radio equipment for sale worldwide.

Satellite Earth Station Development and Marketing Agreement.

Agreement with AT&T to explore the possibility of cooperation in the field of submarine lightwave cable activities.

III. KEY DISCUSSION POINTS

It is our (the U.S. Government) understanding that the APT proposal meets all of the requirements of the tender and it is our view that the proposal is very proactive. The proposal provides for the latest in digital switching technology and provides for several levels of industrial cooperation in the telecommunications area. In that respect we feel that the acceptance of the APT proposal would provide significant benefits to the French industrial community and help to strengthen Franco-American relations.

We (the U.S. Government) have continuously been concerned about how this whole project got politicized and feel that decisions on these types of projects should be made on a solid business and technical foundation.

Senator INOUYE. Thank you very much.

Mr. Fisher.

Mr. FISHER. I am pleased to be able to appear before you today on the important subject of international telecommunications. Although there are many facets of this important subject of interest to Motorola, I am going to focus my remarks today on the particular area of international trade and the need, in particular, for open access to foreign telecommunications markets.

Motorola, as many of you know, has been active for over 20 years in attempting to penetrate international markets for telecommunication products. Our experiences lead to some startling contrasts between our success in open markets like the United Kingdom in which we freely and quite successfully participate to the opposite extreme of Japan, where despite considerable effort we still have only very limited success.

Thanks to our relentless effort, supported strongly, I might add, by U.S. Government officials, we do have a good working relationship in Japan with NTT in the paging and car telephone arena. However, in general our experience in Japan can be characterized by years of negotiation leading to access to only a portion of the market but still coupled with the same high level of up front costs to design unique equipment as if we had gained access to the total Japanese market.

To illustrate, let me review three particular Motorola experiences, all of which I have personally lived through. First, given that Motorola is the world's leading provider of paging equipment, we initiated efforts to be a minority partner with a major Japanese company in a business to provide paging service throughout Japan. After about a year of working through an unbelievable array of impediments, we were finally awarded a meager 9 percent ownership in a system restricted to only Tokyo, the major market, but still only Tokyo. We have been basically excluded from the rest of Japan as a paging service provider.

As a second example, I note that Motorola is also the world's leading supplier of cellular radio telephone systems and telephones.

As you may know, Japan will soon be introducing a nationwide car telephone system.

In recent years, we have developed a strong working relationship with a Japanese company which was trying to gain the license to be the second cellular telephone operator throughout Japan. If they are granted that license, we, Motorola, will provide the equipment.

During this process, a new Japanese company called Japan Teleway entered the scene. Apparently because of the power of the Teleway ownership, our customer and hence our Motorola equipment were eventually forced out of the Tokyo market altogether and given what I could only call token access in the Osaka region in the west and south.

As a third example, we are the world's leading provider of land mobile radio systems. When the Japanese agreed as part of the much celebrated MOSS talks on telecommunications to allow foreign participation and ownership of shared mobile radio systems, we were, of course, elated and saw a great business opportunity. Now, however, after over a year of intense work, we still have not gained our first license, and the ownership, licensing and loading requirements are still very real barriers to our further participation in this business arena in Japan.

The picture I am trying to paint is a somewhat personal one. It is one of frustration and certainly concern for our industry. In each of the areas I mentioned, we, Motorola, are the world leader, undisputed in most cases. We have the world's most advanced technology. We have the will to succeed even in closed markets, and we are expending the energy and resources to be successful.

For all this, however, our successes have been very limited, particularly in Japan, and each of our wins has yielded access to a judiciously selected, to put it nicely, small piece of the market. We must change this process. We do not have enough people in industry or government to fight every battle individually and to open each market piecemeal.

We must institutionalize through legislative initiatives the broad scale opening of the world's closed telecommunications markets. We certainly need, as you are addressing, a strong Congressional mandate for the administration to negotiate meaningful, and I emphasize meaningful, access to our trading partners' domestic telecommunications markets. Failure to achieve this access must result in mandatory and meaningful countermeasures.

Unfortunately, the only leverage we may have left is access to our own market. Our trading partners should be graded on the extent to which their U.S. bilateral trade surpluses are reduced. Unless the world's telecommunications markets are open to U.S. suppliers, just as ours have been unilaterally open to foreign suppliers, our ability to remain competitive in telecommunications will seriously deteriorate, and we must not let that happen.

Thank you.

[The statement follows:]

STATEMENT OF GEORGE M.C. FISHER, SENIOR EXECUTIVE VICE PRESIDENT, MOTOROLA, INC.

Mr. Chairman and members of the Subcommittee, it is an honor to appear before you today on the important subject of international telecommunications. Your continued interest and involvement in issues in this area are to be commended and encouraged. Although there are many facets of this issue that are of intersest to Motorola, I am going to focus my remarks on one very critical aspect: international trade and the need for open access to foreign telecommunications markets. Motorola has long been active in international telecommunications markets and in the debate over U.S. and international trade policies which affect our ability to penetrate world markets for our technologically advanced radio communications products. These policies and related negotiating objectives must continue to be coupled with the support of the U.S. Congress and the efforts of members of the U.S. telecommunications industry to aggressively pursue markets abroad.

In order to provide this Subcommittee with a more comprehensive picture of the current international trade environment for telecommunications equipment, I will outline Motorola's efforts to penetrate certain key international markets; the impact from a trade perspective on the U.S. telecommunications market of deregulation, the divestiture of AT&T, and predatory pricing practices; and finally, our concerns and proposals to facilitate greater access to foreign telecommunications markets for U.S. suppliers in the increasingly competitive global marketplace.

The message I hope to leave you with is that as a company, we have tried for over twenty years to access markets throughout the world. We have had considerable success, especially in open markets like the United Kingdom. On the contrary, in relatively closed markets, like Germany and especially Japan, our success has been much more difficult to achieve. The cost to gain even token levels of access are extraordinary in terms of dollars and the individual dedicated efforts of our people and our government representatives. After many long hard months or even years of negotiation, we usually end up with only a small piece of a market being accessible to us. It is time to use the only effective power we have as a nation—our market—as leverage to gain access to markets that remain closed to us. We unilaterally, and perhaps prematurely, opened our telecommunications market to the world, and the result has been a growing trade deficit. We must put those nations whose markets remain closed to us on notice that further jawboning is inadequate. The measuring stick is the trade deficit, and continued free entry to our market will depend on the opening of other markets—now. Tokenism and further delay cannot be accepted.

1. MOTOROLA'S EFFORTS TO PENETRATE KEY FOREIGN MARKETS

As this Subcommittee is aware, in addition to being the largest U.S.-based semiconductor producer, Motorola is one of the world's leading manufacturers of electronic equipment, systems and components produced for both the U.S. and the international markets. Motorola expanded into international markets in the 1960s, and exports its products to virtually every country in the free world. Motorola currently employs about 90,000 employees in 40 major facilities in 18 countries and Puerto Rico. In the electronic communications equipment area, Motorola is the world's largest producer of two-way radios, radio pagers, cellular radio telephones, and their associated infrastructure and systems.

a. Pagers.—Motorola has been successful in providing equipment for paging systems around the world. Although we first established a presence in the Japanese marketplace in 1960, our experience in attempting to enter the paging market began in the late 1970's, when strong Japanese competition was beginning to emerge in several of Motorola's key businesses in the United States. Since Japan is the world's second largest telecommunications market, we could ill-afford to ignore this market. However, Nippon Telephone and Telegraph (NTT), the state-owned Japanese telecommunications monopoly, was the only potential Japanese purchaser of our highly advanced equipment, in which we maintained a technological and hence competitive advantage. In 1980, the United States and Japan negotiated a bilateral telecommunications agreement known as the NTT agreement. The intent was to provide foreign suppliers equivalent treatment to domestic suppliers when it came to NTT Purchases of state-of-the-art telecommunications equipment.

Even before the U.S.-Japan NTT agreement was signed, Motorola unsuccessfully approached NTT. Following consummation of the NTT agreement, the reception was not much different. We had extreme difficulty gaining access to specifications, the appropriate procedures for submitting a bid, and other key aspects of how to sell to NTT—until pressure from the U.S. Government was applied. In 1981, nearly one-and-one half years later, Motorola received a contract for $9 million worth of pagers

(50,000 to 60,000 units). The pager contracted for was a completely redesigned model to meet the unique design and performance specifications of NTT (Japanese pager specifications are unique in the world). The entire endeavor, ultimately successful, had necessitated the strong support and involvement of the U.S. Government. After further protracted negotiations over price and share (the lion's share of the business was historically placed with two Japanese suppliers), Motorola ultimately received one-sixth of the NTT pager market and became the first non-Japanese suppoer to the NTT paging system. By 1985, we were offering pagers to NTT that were as good as, or better than, the quality of pagers offered by the traditional Japanese suppliers to NTT. In 1986, we are pleased to say that due to our quality and delivery performance, we were awarded nearly a 25-percent share of the business—the largest share of any single supplier, the other five (all Japanese) suppliers receiving a 15 percent share each. Since our first sales in 1982, we have shipped over 400,000 pagers worth approximately $63 million to Japan. After years of hard work, we are doing well, but our participation and share are in NTT's hands and not the result of open, competitive market forces.

Our efforts to penetrate the pager market in Japan did not end there. In 1985, the first steps were taken to "privatize" NTT. Also, the United State and Japan entered into so-called MOSS (market-oriented, sector selective) discussions in four sectors, including telecommunications, designed to remove impediments to market access. Motorola supported the U.S. Government's efforts in the radio communications area. Changes in Japan's telecommunications law to allow competition to NTT in the paging and other businesses were pressed by the U.S. Government during these negotiations. Regulations were written defining the various classes of common carriers and spelling out the foreign ownership that would be allowed. As a result, Motorola recognized a further business opportunity to sell paging services as well as equipment in Japan.

Optimism quickly turned to cynicism as we began what turned into protracted and difficult negotiations with other Japanese companies interested in participation in a joint venture for a nationwide (common carrier) paging service. It was Motorola's initial intent to hold at least a 20 percent interest (33 percent is the legal limit in Japan for foreign participation in a common carrier) in the venture and, because of our extensive technological leadership and experience in the Japanese paging market, to be a major equipment supplier. Pressure was brought to bear on us to substantially reduce our equity share. Again, the efforts of the U.S. Government, as well as timely intervention by members of Congress, became necessary as it became more and more apparent that efforts were being made to squeeze us out of participation in this market opportunity. With help from the U.S. Government and the resulting sensitivity of the Japaense MPT to the necessity of involving a foreign (U.S.) participant, we were ultimately able to achieve a 9 percent equity share in the new pager company. However, the new company will be limited to the Tokyo area only, as compared with the initial proposal that it be nationwide. We have received approximately a 50 percent share of the infrastructure equipment business worth about $10 million. Because of the limited market area available to us, the cost of redesigning base stations (a significant part of the infrastructure) to meet unique Japanese standards, is prohibitive. We continue to press for additional equipment sales in other regions of Japan, but the outcome of those efforts is yet to be determined. There appears to be no further opportunity for equity participation as a service provider.

b. Radio Telephone Systems.—Motorola's efforts to penetrate world markets with our state-of-the-art cellular mobile telephone technology should also be instructive to this Subcommittee. The availability of this new technology has dramatically expanded the world market for mobile radiotelephone service from just over 400,000 subscribers worldwide in 1982 to over three million more by 1990, according to our estimates. The North American market accounts for more than one-half of today's world market and is forecast to grow to 1.5 million subscribers by 1990. We project that the Japanese market should have about 300,000 subscribers by then, and the combined subscriber demand in other countries, including the United Kingdom, Austria, Korea, Hong Kong, and Isarel, where Motorola has been instrumental in implementing cellular telephone sysetms, could exceed one million.

In Europe, the mobile telephone market today remains a fragmented one due to different standards and frequency allocations. The European countries can be broken down into two broad groups: those that generally provide an environment which encourages the development of their telecommunications industry with the help of skilled partners from any place in the world; and those that generally do not provide a friendly environment for development of their telecommunications indus-

try by others outside their geographical bounds. The United Kingdom is an example of the former, and Germany is an example of the latter.

In the early 1980's, the United Kingdom's telephone company, British Telecom, was privatized. It began an investigation of various cellular telephone standards. In so doing, it opened the doors to Motorola's participation in the installation of a nationwide cellular infrastructure based on a slightly modified U.S. standard. Our initial order was for $22 million for cellular switching and cellsite equipment. Since then, we have continued to be a leading supplier of cellular phones in the United Kingdom.

By contrast, the German market for infrastructure equipment remains largely closed to foreign manufacturers. In the Federal Republic of Germany, the Deutsche Bundespost (DBP) continues to control the regulations governing telecommunications and radio frequency usage. The government, through the DBP, is still the holder of the monopoly license for the landline telecommunications system, the mobile telephone system and the radio paging system. To the best of our knowledge, no foreign company participates in the German cellular telephone or radio paging infrastructure market to any significant degree. As cellular subscriber equipment is not sold through the DBP, non-German manufacturers can compete in this market. It has, however, different standards and frequency allocations requiring different design and manufacture.

In sum, the climate in Germany has resulted in substantially lower involvement for Motorola than in the United Kingdom. Although we have a similar presence in both countries, and we present the same broad array of products to both markets, we do substantially less business in Germany. Although the German market is larger and is growing more rapidly than the U.K. market, our sales in Germany continue to be a small fraction of the sales in the United Kingdom.

It is also noteworthy that in France, with the change in governments last year, a decidedly deregulatory philosophy appears to be taking hold. Although the French currently have no foreign mobile telephone products, we understand that they are currently considering a far more open market for cellular products and standards.

We are seeing the competitive struggle for new markets in new technologies now taking place in the developing world as well. Here also, U.S. firms are at a competitive disadvantage. Our major competitor's (Japan and Sweden) bids for cellular systems in the third world have been supported by their governments with zero or very low interest loans at stretched repayment terms with sizeable grace periods, subsidized by their governments foreign aid funds. Some developing nations are now institutionalizing minimal conditions for interest rates, repayment terms and grace periods before they will consider foreign bids, and U.S. firms find themselves unable to match them without government assistance. The U.S. Eximbank, while supportive of U.S. industry as it faces subsidized official export financing in international markets, is limited by its shrinking budget and by its inability to draw on U.S. foreign assistance funds for competitively funded projects in developing countries. U.S. industry needs increased resources and more flexible lending terms for Eximbank, and access to U.S. foreign assistance funds where they are a factor in competitive bids.

In Japan, we are currently supplying a limited number of cellular telephones to NTT. However, NTT's existing cellular car telephone system consists of outdated technology which is over subscribed. NTT is in the process of changing over to a new high capacity system. The liberalization of the Japanese market in 1985 also resulted in the formation of common carrier competitors to NTT for the cellular telephone business. A company called Daini-Denden (DDI) was formed with the intention of entering the cellular business. DDI chose to use Motorola equipment if it was granted a license for cellular service in Japan. The Japanese Ministry of Post and Telecommunications (MPT) in 1985 established a Committee to review the technical standards for car telephone service. The Committee subsequently approved a slight modification of the U.S. system, called JTACS, along with a new high capacity NTT system, for Japan. However, before the MPT had issued a license to DDI, a second group, Nihon Teleway, also came forward with a proposal to enter the cellular market, but using the new high capacity NTT system instead of the U.S.-type system. The MPT wished to license only one group in addition to NTT with its existing system. Again, the U.S. Government made repeated attempts to stress the importance of a decision that demonstrated Japan's intent to live up to its commitments made in the MOSS talks to truly completely open its market to foreign suppliers.

Late last month, the MPT announced that it would grant licenses to both DDI and Teleway and split the country geographically between the two. Efforts to unite the two groups into one management structure had been unsuccessful. DDI was

awarded an area consisting of only approximately one-third of the population; Teleway got the highly developed Tokyo market area as well as Nagoya. Since Teleway appears determined to adopt the high capacity NTT system, once again, only a fraction of Japan's market will be open to U.S. suppliers. In fact, access for other Japanese manufacturers which are currently supplying subscriber equipment for the U.S.-type system in various countries around the world, will also be limited. To the best of our knowledge, only two Japanese companies are currently engaged in developing equipment for the new high capacity NTT system. Once again, just as in the case of the paging service company, after years of negotiations, we are allowed to compete in a token part of the market (approximately 12 percent given that NTT has 60 percent of the frequencies), and yet have to spend money to design unique equipment at the same level as if we had access to the entire market.

The MOSS talks also presumably paved the way for development of private radio "third party" services in Japan. (In the United States, a third party private radio service consists of competing entrepreneurs which are licensed to offer non-rate regulated radio dispatch service to a wide range of mobile radio users.) Over a year ago, Ministry of Posts and Telecommunications officials formally wrote to the U.S. Department of Commerce officials that "it would be possible . . . even under the Japanese system, to realize substantially the same system as third party service. . . ." To date, Motorola is still working diligently to obtain its first license. How many years will it take? Probably just enough for the Japanese to catch up technologically in their product offering.

Are foreign telecommunications markets open to U.S. suppliers? The world over, Post, Telegraph and Telephone authorities (PTTs) are controlled, if not owned, by their governments—with few exceptions. Equipment procurement is largely confined to domestic manufacturers. The U.S. Government, backed by pressure from the Congress, has also been embarked for over a year on market access fact-finding (MAFF) talks with the German (as well as Italian) Governments. Other bilateral talks may follow. One of the goals is to open procurement to participation by U.S. suppliers. To date little progress has been made, and the trade deficit continues to grow. We support these efforts but believe there must be meaningful enforcement measures to back them up if tangible results are not forthcoming within a reasonable time period.

Is the door to the Japanese telecommunications market, the world's second largest, really open to foreign participation? Perhaps a crack, but by comparison to the open door to the U.S. telecommunications market, the largest in the world, a wide disparity still exists. We are appreciative of the fact that some progress was made, and that Motorola is the first foreign company to be participating in either the paging or cellular business in Japan. With hard work, diligence to detail, a very strong desire to succeed, an attitude of listening to the customer, and aggressive ongoing support of the U.S. Government, it is possible to do business in Japan. We continue to be pleased with our growing relationship with NTT. But free market forces are not presently dictating our business opportunities or prospects for the future in Japan. Repeatedly, Japan has hailed its market as "open." In the United States, this would mean that we can compete for 100 percent of the market for our equipment. By contrast, in Japan, an "open" market yields opportunity in only a small fraction of the market instead. Further, our government has limited resources to carry on these continuous battles. Our company, for one, is most appreciative of the level of support our industry has received to date, but frankly, it is ineffective for either us or our customers to continue to do business in this manner.

We would urge enactment of legislation which gives foreign governments a choice: open up markets or face the prospect of paying a higher price for entry to our market—through substantial tariffs or other effective measures. We have no real ability to control foreign governments or foreign companies, but we do have the potential to control our own market. For nations which maintain excessive bilateral trade imbalances with the United States, that trade deficit should serve as the report card.

2. THE U.S. MARKET: TRADE IMPACT OF DEREGULATION, DIVESTITURE AND JAPANESE PREDATORY PRICING PRACTICES

While the U.S. telecommunications industry was fighting hard for small victories in the key foreign markets of the world, the dramatic deregulatory and nonregulatory efforts promoted by the FCC and the dogged pursuit on the part of the Justice Department of divestiture of AT&T, simply opened the floodgates to the lucrative U.S. telecommunications market to all comers. The result was that large, domestically protected, foreign national telecommunications industries, still sheltered from

risk in their home markets, pounced on the U.S. market with a combination of predatory pricing tactics and government-subsidized advantages not offered to or sought by U.S. telecommunications manufacturers. Even though these predatory tactics were taken to task through use of our U.S. trade remedy laws (in our experience, for pagers and cellular telephones), foreign manufacturers were not dissuaded from continuing to seize market share and drive out competition in the most advanced and growth-promising fields of the industry.

Perhaps coincidentally, at the time that Motorola was finally making inroads into the Japanese pager market, Japanese pager manufacturers began unfairly seizing U.S. market share by dumping pagers in the U.S. market. In 1982, Motorola filed a dumping case with the U.S. International Trade Commission and the Department of Commerce. As a result of their dumping, Japanese industry almost doubled the market share it held at the start of the period covered by the investigation. The dumping margins found ranged from 70 to 110 percent.

Some of the same Japanese companies continued their dumping strategy in the cellular telephone area as well. In 1985, the International Trade Commission again determined that the U.S. industry was injured by dumped imports—by margins ranging to more than 100 percent for some Japanese suppliers. However, in both cases, by the time the final dumping determination was issued, U.S. industry had already lost tens of millions of dollars in sales and potential profits to Japanese competitors. It is virtually impossible to ever regain the lost market share.

The effect of the lure of the U.S. telecommunications market and the success of foreign manufacturers, unencombered by trade barriers in the form of regulatory practices that they force on outside firms in their own markets, is well documented in the telecommunications trade statistics. The trade balance began to deteriorate in 1982 and 1983, but divestitute in 1984 magnified this impact. The U.S. trade balance in telephone and telegraph communications equipment went from a positive $203 million in 1982, to a deficit of $419 million by the next year, and this accelerrated to a deficit of $1.3 billion by 1986. In the radio communications industry, a similar trend is evident. To have totally opened the U.S. telecommunications market unilaterally without seeking similar reciprocal action by at least our key trading partners was naive with respect to the trade impact on the U.S. telecommunications industry.

The Department of Justice may have been responding to our antitrust laws in its insistence on breaking up the Bell monopoly, but the U.S. economy and U.S. foreign trade objectives were dealt a major blow. The trade impact of the deregulatory and divestitute actions since 1981 was apparently never, or at best, only cursorily considered in this process. Only now, with the alarming numbers illustrating the dramatic reversal of U.S. international competitiveness in one of the prime sectors of U.S. high technology industries, are some policymakers realizing that the unilateral actions of the United States gave away so much without asking anything in return. With leverage gone, and difficult to apply after the fact, U.S. telecommunications equipment manufacturers continue to struggle to retain market share at home, maneuver their way into restrictive markets abroad, and still find the resources to invest in R&D, product innovation and cost reductions that will allow them to be part of the American competitive arsenal for the 1990's and beyond.

Certain members of the U.S. Congress has recognized the gravity of this situation and recognized it early on. For example, Senator Danforth, in early 1984 charactrized the breakup of AT&T as "a trade disaster in the making." It is time for some decisive action before it is too late.

3. NEED FOR LEGISLATION TO FACILITATE GREATER FOREIGN MARKET ACCESS

Motorola strongly endorses a Congressional mandate for the Administration to negotiate meaningful access to our trading partners' domestic telecommunications markets. Such negotiations will have to deal with denials of national treatment for U.S. telecommunications equipment and service providers, and bring about an equity of market access in the major world markets. Such legislation should provide for action by the Executive Branch against countries which refuse to enter into market access commitments, or which fail to uphold the terms of negotiated agreements. The timetables for negotiation or for extension of negotiating periods should not be overly flexible, noting the critical time period being faced by U.S. industry in its uphill competitive battle. U.S. industry must be assured not only that meaningful negotiation will take place, but that failure to secure the objectives of telecommunications market access negotiations will result in mandatory, meaningful action by the U.S. government. Only a strong and nondiscretionary menu of actions will be an incentive for nations to enter into talks sincerely, and will similarly serve as a

deterrent to nations which take advantage of the U.S. market without providing fair and reciprocal opportunity.

In the area of general trade law reform, certainly of interest though not under the jurisdiction of this Subcommittee, we would urge passage of meaningful improvements to U.S. trade laws dealing with unfair trade practices, such as Section 301 and our antidumping laws. In our view, telecommunications is one example of a "targeted" industry, and U.S. industry must be assured that the Executive Branch will take necessary action to counter the injurious effects of a foreign government's targeting practices. Motorola's experience with "repeat offenders" of U.S. dumping laws by Japanese manufacturers graphically illustrates why we must have legislation providing for penalties for repeat offenders that will serve as a deterrent to this kind of behavior. I would urge the members of this Subcommittee to support such measures as general trade legislation makes its way to the Floor of the Senate.

Thank you for the opportunity to appear before this Subcommittee on a subject of major importance to my company. Unless the world's telecommunications markets are open to U.S. suppliers just as ours is open to foreign suppliers, we will not be able to remain competitive. We stand ready to work with you toward achieving a truly open world trading system for our advanced, state-of-the-art telecommunications technology.

Senator INOUYE. Thank you very much.

Mr. Phillips.

Mr. PHILLIPS. Thank you, and good morning, Mr. Chairman. I am Chairman for Legislative Affairs of the Committee of Corporate Telecommunications Users. The group includes some 30 of the largest users of telecommunications in the United States. I am also a member of the graduate faculty of New York University and Citicorp's Vice President for Telecommunications Policy.

I feel something like the black sheep because users are often spoken about but rarely spoken to, and for this opportunity I am deeply grateful.

With the migration of our national economy to service industries and the information services in particular, telecommunications and trade have become synonymous. Whatever else has changed in our nation's business framework, the United States leads the world in information flows and is not likely to lose that lead in the near future. We are the home of more than 60 percent of the on-line data bases in the world. A VISA card user in Paris, the job applicant in Berlin, an emergency room physician in Stockholm, the stock market investor in Zurich are all switched in and out of hundreds of data bases at the speed of light, generating millions of transactions every day. Most of these bring usage-sensitive revenues into the domestic economy.

This information crosses national boundaries. So do the dollars. Telecommunications policies made here and abroad bear strong economic consequence. International foreign and domestic standards can make or break this flourishing system and our promising position within it.

These are not abstract intellectual debates, as they are often described. They lead to binding agreements holding treaty status that can produce far-reaching and so far unexpected consequences. For example, the December 1984 earth station ownership decision seemed progressive at the time, but it has led to COMSAT shedding its five mainland earth stations, with its Hawaii facility deeply in jeopardy.

Hawaii has bid to become the gateway to the fastest growing information market in the world. That is not Europe. That is the Pacific basin, but stripped of diverse international broadband facili-

ties linked to mainland networks, Hawaii will never match the region's growth in telecommunications.

Another costly barrier: policy initiatives here have no guarantee of world acceptance, as the FCC is beginning to learn. For example, shared use and resale of telecommunications was approved domestically by the FCC in 1977, but it is still absolutely forbidden under international regulations, causing the continued inefficient use of international facilities. The result is higher costs for large users and people who consume their services.

Most importantly, in international service, to rephrase Orwell, all data bits are equal but some bits are more equal than others. The bits that cross borders receive special attention from many governments. This is an economic or political fact of life rather than a technological necessity.

In today's technology, the bits comprising a highly confidential credit file are virtually indistinguishable from those comprising our national anthem. Thus, any official efforts to create diverse categories of information, some of which may be more free to cross geopolitical boundaries than others, should be examined by this committee with the greatest suspicion.

In 90 percent of the world, the flow of information is not free. It is subject to invasive regulation by volume and increasingly, to our alarm, by content. As Americans, we tend to take many of our freedoms for granted. Freedom to transmit information free of interception and regulation ranks very high amongst those. Moving data faster through high technology seems completely natural to us once we learn how to push the right buttons.

We fail to notice, however, that this freedom, let alone its newest exercise, is unique to the United States. In some countries, even the distribution of photocopying machines is highly regulated.

Of particular concern to this committee should be the reconciliation of international and domestic communications policy planning in the concrete, not in the abstract. Let me give a few examples, two at least.

First the international side:

Upcoming shortly is an all-out effort to rewrite the international telecommunications regulations. This is the ITU's 1988 World Administrative Telephone and Telegraph Conference (or "WATTC"). Time does not permit a detailed discussion of WATTC. You should understand, however, that American industry has much at risk. WATTC planners are targeting both telecommunications networks and services. In the United States, we view this with grave concern. Traditionally, only the vehicles of information transport are regulated in the United States. This is AT&T, the Bell Operating Companies, the so-called dominant service providers. Otherwise, our national network strives to be most open and least regulated. Were the U.S. to become a party to the type of regulation contemplated for WATTC-88, a new regulatory philosophy would emerge here. Restrictions could be imposed not only on carriage but, through the regulation of "services", on the information sector as a whole.

As business people, naturally we expect our Government to gear up in opposition.

Now let's look at the domestic side. The Justice Department has just recommended substantial relaxation of restrictions barring the Bell Operating Companies from business opportunities they covet. Among these is entry into the information business. The implications are obvious. Local telephone companies will be able to shift over to their information business resources gained in 100 years of monopoly. They have a running start on information service providers now trying to build their own systems, step by step.

From the domestic policy viewpoint, consider the local phone companies now billing in behalf of local tradesmen and nationwide chain stores. The result can be a questionable exchange of information. The phone company will not have access to not only customers' lines of communications, but to their lines of credit, too: the merchants will have access to customer calling patterns and other demographic data, bypassing today's costs for market research. Privacy and intellectual property issues associated with unfettered entrance of local telephone companies into the information business have not been considered by regulators or Congress to date.

From this committee's policy perspective, moreover, you will readily recognize that international and domestic aspects are about to clash. On one hand, we seek to confine regulations internationally to the barebones transmission systems. On the other hand, we consider inviting domestic carriers into the service sector, contravening arguments we would be prepared to make in the international arena.

Clearly, U.S. policy planners must reconcile these fundamental differences.

The CCTU's members operate telecommunications networks in over 60 countries. We have found that the most effective means for working out telecommunications trade and related issues is on an informal basis locally. We have also learned the advantage, long held by governments abroad, of unified policy planning. Thus we applaud the step forward taken by our Government in establishing the State Department's Bureau of Information and Communications Policy under Ambassador Dougan, but urge her to press for bilateral talks on this subject of regulation of services during the next year and one-half prior to WATTC-88.

To this day, however, far greater resources are being devoted abroad to these telecommunications matters, with potentially profound effects on U.S. trade policy. In part, this reflects the ability of foreign governments to control, perhaps even operate, all aspects of public communications. Theirs is a prerogative descending from the Crown, even if learned through colonial practice. Here, under the Interstate Commerce clause, service has flourished in private hands. In the private sector, we have notices that increased competition in service providers generally is to the benefit of users. It tends, long term, to drive prices closer to costs. "Flash cut" deregulation, however, leads to stultified markets lacking in competition, robust enough to survive the test of time.

In the interest of wise policies, the private sector, certainly the users, should seek an open on-going dialogue with this committee in order to assure that U.S. policy is well organized and that our country remains in the forefront of the Information Age.

Thank you.

Senator INOUYE. Mr. McKeever, we have discussed with the first panel the matter of the switch market in France.

Are you satisfied with the extent of services provided by the U.S. government in your endeavor?

Mr. MCKEEVER. Yes, Senator, we are. The Government has been very helpful, both the Commerce Department and the U.S. Trade Representative. We have genuinely appreciated the assistance we have received so far.

Senator INOUYE. Do you think they are doing everything possible within the laws of our land?

Mr. MCKEEVER. Yes, Senator, I do believe that. I'm not sure that there's much more they could do.

The thing we particularly welcomed was the attention that was focused on this decision, to put it in the spotlight, so that the decision is ultimately made on business and economic grounds, and not on a kind of European political basis.

We think that the attention the United States government has paid has created an environment in which the decision will ultimately be made on the merits, the economic merits.

Senator INOUYE. Do you think the Europeans are taking our government seriously?

Mr. MCKEEVER. I believe so, Senator. I would be hard pressed to have an opinion one way or another on that.

Senator INOUYE. It has been noted that up until now we have been able to deal with the Europeans on a country by country basis, but now they are coming up with pan-European type solutions.

How will that affect you?

Mr. MCKEEVER. Let me, if I understand the question you're asking, Senator, I think that manufacturers, particularly for central office equipment, are recognizing the fact that the investments required for research and develoment are simply too massive for very small business units, with small manufacturing and market bases, to support.

Consequently, there's a trend in the industry towards an amalgamation of individual units that don't have the critical mass necessary to remain viable; central office equipment manufacturers.

I think when you referred to a European solution, if your reference is towards a political closing of European markets to American manufacturers, AT&T would be distressed by that. We've spent considerable time and considerable money trying to penetrate European markets, and we have had some limited success.

On the other hand, if the question is, what's the right set of technical standards that ought to be applied throughout Europe for switching or transmission, that sort of thing may facilitate trade.

I hope I've addressed the question you asked.

Senator INOUYE. Mr. Fisher, I think you were exceedingly diplomatic and generous in describing your problems with the Japanese.

While you were going through this horrendous time, what was our government doing to help you?

Mr. FISHER. We, as I note and stated, have had extensive help from both USTR and the Commerce Department, I think to the maximal extent that they could participate.

Clayton Yeutter and Malcolm Baldrige's people have been of great help to us every step of the way.

The problem, as I see it, is, their resources, as ours, are just too limited to fight everyone of these issues one by one. They're very, very time consuming.

Senator INOUYE. But do you think we've done all that we could?

Mr. FISHER. I think we're up to the brink right now, where we really have to face the fact that something dramatically different has to be done.

Because I think we're not going to make much more progress, the way we're going, except very slowly. And it could be too late.

Therefore, have we done all that we could do under the existing laws? I think we have done quite a bit. We need, as I point out, a new mandate through the legislative process that you are working on to make sure that the President really is given the mandate to do something much more serious than he is able to do or willing to do right now.

Senator INOUYE. Would the Danforth telecommunications trade bill provide this mandate?

Mr. FISHER. Yes, it is certainly a step in the right direction.

Senator INOUYE. And so you support that?

Mr. FISHER. Yes.

Senator INOUYE. Mr. McKeever, do you support the bill?

Mr. MCKEEVER. Yes, Senator, we do. But we support the bill, its principles and objectives. We think that there may be some fine tuning appropriate in the bill. But on the whole, we support it.

Senator INOUYE. Senator Packwood.

Senator PACKWOOD. Mr. Fisher in your statement, you say it's time to use the only effective power we have as a nation, our market.

And then you go on a little further, and you say, the measuring stick is the trade deficit.

Do you mean, as a conclusive presumption, that if we have a negative trade deficit with Japan or some other country in a certain area, that is presumptive evidence of a closed market?

Mr. FISHER. I think we obviously have to apply intelligence to that. I have wrestled with the Japan issue for many years personally.

And one thing I can say, without saying anybody is doing right or wrong in either market, the net result is a monstrous trade deficit; a growing one in telecommunications and in radio communications.

Senator PACKWOOD. Well, let me come back to Hong Kong, again. Proportionately, our trade deficit with Hong Kong is bigger than Japan. Hong Kong has a very small population, comparatively speaking.

But they have no restrictions. It's just going to be difficult, in the areas where they choose to compete, for us to have a positive balance of trade, when we're trying to sell to their population and they're selling to 240 million people.

What do you do in that situation?

Mr. FISHER. I think again there's the question of applying reasonable intelligence and looking at the aggregation of policies of a given country in addition to the trade deficit.

In those policies I would add targeting for instance.

Senator PACKWOOD. What do you mean?

Mr. FISHER. I don't believe Hong Kong has any state supported targeting of many of the high technology industries that we are involved in.

Senator PACKWOOD. No, they don't.

Mr. FISHER. Whereas Japan clearly does. And I think therefore that the trade deficit in and of itself is not per se evidence of unfair trade.

Senator PACKWOOD. Thank you. No other questions, Mr. Chairman.

Senator INOUYE. Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman.

I think we would all agree, would we not, that in the case of a nation that we continue to enjoy—to suffer from a trade deficit, and yet they are not employing protectionist measures, then that would give us an opportunity to focus on the other competitive aspects that America has to focus on if we are going to redress those imbalances.

And I would suggest that our job would be a lot easier focusing on those areas if we did not have the protectionist behavior on the part of the vast majority of our trading partners.

And I think also a case could be made that Hong Kong is the exception that makes the rule, perhaps, when we look at the overall policies of the nations in which we enjoy such substantial deficits.

Mr. Fisher, I appreciate, and I think this committee appreciates, hearing from someone who has experienced the frustrations, the enormous frustrations, involved in dealing with the Japanese.

It is one thing to hear the stories from a theoretical viewpoint, and it is something else to have the benefit of someone who has been through this many-year-long agonizing experience.

I don't think you were here when I asked Ambassador Woods, the U.S. Trade Representative, if he agreed with your statement that we need a strong Congressional mandate for the administration, and the only leverage we have left is access to our own market.

He agreed with me. I was gratified, but at the same time, I don't see administration support for the Danforth bill or like measures.

You have said a couple of times that your, and U.S., resources under the present framework are limited, and that's a major problem that you see.

What additional resources need to be brought to bear, and in what fashion?

Mr. FISHER. I think probably the question needs to be the better establishment of a system whereby perhaps the same number of resources can be more effectively utilized, as opposed to adding resources.

I think your first point was very germane. We, in order to remain competitive, both as a government and as an industry, need to apply our resources to that purpose, being competitive, being, in my case, a technological leader, a business leader. To apply more of my resources to the job of jawboning in Japan, for instance, is not making me a better producer of high technology products.

Therefore, I think what we need is an infrastructure, dictated by legislation, which makes more effective use of the resources we are now applying to this problem, in such a way that we can address these issues generically, and not piece by piece.

We will be piecemealed to death. There is a phrase in Japan, you die a death of a thousand swords. And I think that's what we're dying of.

Senator McCAIN. In your opinion, how much longer can the industry continue to function without suffering irreparable damage if things don't change rather dramatically?

And I know that's a tough question.

Mr. FISHER. Well, it's not really tough, because we're already suffering damage. How much it's irreparable, I think it's very difficult to say.

I think in my testimony I outline two dumping cases I was personally involved in. Those both resulted in irreparable damage, in that there was loss of market share forever. It's very difficult to get back.

So irreparable in those two cases.

Senator McCAIN. What damage was done?

Mr. FISHER. The paging case, in which there were margins assessed of over 100 percent, and in the cellular case, which some companies—some of the same companies, by the way, had margins of over 100 percent again.

Senator McCAIN. Thank you. Mr. Chairman, I just have one more question of Mr. McKeever. Thank you for your indulgence.

And also, Mr. Chairman, I want to express my appreciation for your having this hearing. I think it's been very important, and I think will provide us with some very valuable information as we shape legislation which I believe will be forthcoming of some kind.

Mr. McKeever, you said that the Danforth bill, you supported it, needed some fine tuning. Could you elaborate a little bit on that?

Mr. McKEEVER. Yes, Senator. If I understand the bill correctly, and I can't claim to be an expert on it, I understand that the retaliation provisions that are in the bill are designed to be triggered automatically; they're mandatory within a certain period of time.

In our view, we think that certainly any trade legislation ought to be equipped with retaliatory positions. We don't think that the United States will have a credible position at the international bargaining table without them.

However, we think that they may work, if they're done with a broad brush, eliminate discretion, eliminate taking account of all circumstances surrounding a particular country and its relative degree or openness or not, it may do more harm than good.

In our view, when the day is done, what needs to happen is for U.S. manufacturers to have access to those foreign markets. If the result of retaliation mechanisms is to erect walls around the United States, so that we all simply play within the U.S. economy, that is not a prescription for success, in our view.

So consequently, retaliation provisions need to be carefully used; ought to be flexible, and ought to be tailored to the precise situation that we face at the time.

That was the fine tuning I was referring to, sir.

Senator MCCAIN. Well, I think you've put your finger on what will be the crux of the debate. Because I don't think anyone wants the results of this kind of legislation to be as you described. Yet at the same time the growing frustration on the part of many of us in the either inability of lack of desire on the part of the administration to respond then leads us more and more towards the kinds of legislation which run the very dangers of which you speak.

But at the same time, if we put all kinds of authority in the hands of the administration and then they don't exercise it, then we'll be back to where we started from.

So I think you might have described the dilemma that we face as we move forward on this legislation.

Thank you very much, Mr. Chairman.

Senator INOUYE. Thank you very much.

The so-called Danforth bill is a tariff bill, and as such, comes within the jurisdiction of the Finance Committee. However, I intend to recommend to the Commerce Committee that we involve ourself in the process, and will recommend that we take official action supporting this measure, unless we are convinced otherwise.

As of this moment, I would say that the overwhelming majority of this committee is in support of the Danforth bill, or at least the principles expressed in that.

Mr. Phillips, what are your thoughts on the Danforth bill?

Mr. PHILLIPS. Well, as it stood at the last reading, we to begin with share Mr. McKeever's view over the inclusion of automatic sanctions. We're however very concerned with any legislation which would essentially turn a Federal regulatory body, namely, the FCC, into any role enforcing the outcome of antitrust activity.

We are concerned with their ability to tap resources to address those issues. We feel that from a user standpoint the potential for abuse of some of the policy guidelines, indeed, in fact, legal guidelines that Judge Greene has cited with respect to tacit cross subsidies, are yet to be fleshed out, and indeed, remain significant risks.

So with those two yellow lights, we would give it otherwise very much a green light.

Senator INOUYE. What agency would you suggest should be the proper agency instead of the FCC?

Mr. PHILLIPS. Traditionally, this is an issue for the Justice Department's enforcement and antitrust divisions to look at.

I'm not an attorney, and wouldn't want to render the opinion of one. However, it would seem that there are indeed issues, in fact, the major thrust of my testimony was to try to assert the importance of linking international and domestic issues; and indeed, both attend there.

Consequently, this is not simply a matter of a traditional antitrust nature, and as your question suggests, requires multiagency scrutiny.

Senator INOUYE. You're speaking of the Danforth antitrust provisions, but what about the trade provisions?

Mr. PHILLIPS. The trade provisions, clearly we endorse the thrust of that legislation.

Senator INOUYE. Do you think the FCC is the proper body?

Mr. PHILLIPS. We think the FCC, if sufficiently empowered with resources to address those issues, could be. We feel that it would

require additional resources above and beyond what it has at present to address those types of issues.

Senator INOUYE. Mr. McKeever, you mentioned three broad areas that should be looked into when we consider international trade.

First, was stability in the domestic market. From your vantage point, do we have that stability?

Mr. MCKEEVER. No, Senator, we don't. The recent filing made by the Department of Justice with Judge Greene respecting change in the permissible activities to be engaged in by the regional Bell operating companies creates another period of confusion, delay and perhaps chaos in terms of the fundamental structure of the U.S. telecommunications industry.

We think that filing alone is creating a problem.

Senator INOUYE. How would you cure that problem?

Mr. MCKEEVER. Well, certainly, Senator the process that has begun in the decree court must be allowed to run its course. AT&T will file comments in the middle of March, and then other interested parties will be heard from during April.

And sometime later this year the court will rule. There's nothing to be done about the fact of the judicial process.

We think, however, that the deliberation ought to be very carefully weighed in terms of the impact that the Department of Justice recommendations could have on a variety of areas of the public interest, to include foreign trade.

In AT&T's view, the Department of Justice proposals will not do anything to improve the U.S. trade position in telecommunications, but would probably worsen it.

In terms of providing stability over the long pull, I think it's interesting to note a couple of things about foreign countries. First, no other country is engaged in the kind of experimentation with this kind of industry as has the United States.

The U.S. is out ahead of everyone else. Apart from being out ahead of everyone else, other countries aren't really emulating what we're doing here in this country, in anywhere near the same way or at the same rate.

Instead, this country's principal trading competitors are observing what's been done here, and trying very carefully to avoid the mistakes that may have been made in this country.

Senator INOUYE. Well, we're not on a level playing field from that standpoint?

Mr. MCKEEVER. No, sir, the U.S. telecommunications industry is in what seems to be a continuous state of flux since the early 1970s. It's not come to rest.

The AT&T divestiture was only effected in 1984, and now just three years later the government wants to change—the Department of Justice would propose standing that original decree on its head, and making changes that go to the fundamental nature of the industry.

Three years is a very short period of time in which to do that. The question for members of the industry is, what comes after this? What's the next step?

Senator INOUYE. Mr. Fisher, you spoke of Japan. Are there other countries where you have the same problems?

Mr. FISHER. Certainly, Japan is the extreme, a very important extreme. Certainly, I'd have to add Germany somewhere in between the UK and Japan, closer to Japan, in that the Bundespost basically controls the industry, and in that sense, acts as the FCC and operator of many of the important telecommunications services.

We have found it very difficult to make headway in Germany to the extent that we have, for instance, in the UK, even though the German market is growing faster than the UK market.

Senator INOUYE. Are there obstacles presently in place in the United States where the Japanese would have similar problems here?

Mr. FISHER. I'm sure there are. Looking at our own industry, there are limitations on ownership of common carriers by foreign entities, which might be put in that domain.

As far as direct competition with us in the sale of end-user equipment, I can't think of any offhand.

Senator INOUYE. So it's not a situation where fair is fair?

Mr. FISHER. Oh, I think we're well beyond that. I think that day has passed.

Senator INOUYE. All right, thank you gentlemen. Thank you very much. You've been most helpful.

The record of the committee will be kept open until March 6, and any person wishing to submit statements will be welcome.

The hearing will be recessed.

[Whereupon, at 11:35 a.m., the hearing was adjourned.]

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

Statement of Pan American Satellite

Over the past year or more, INTELSAT has consistently demonstrated a willingness to abuse its protected status in order to exclude competitors from the marketplace. Despite expressions of Executive Branch and Congressional concern, and despite instructions given to Comsat in preparation for INTELSAT Board of Governors meetings, INTELSAT has continued on its anticompetitive course with relative impunity.

In large part thanks to U.S. policies, INTELSAT has a virtual monopoly over international satellite services. Yet INTELSAT, alone among Government-sanctioned monopolies, is not subject to effective oversight or regulation by the Government. As the U.S. implements its policy of promoting competitive separate satellite systems, it is critical that the U.S. stop INTELSAT from engaging in such practices as predatory pricing and cross-subsidization of competitive services with monopoly profits.

A few examples, familiar to U.S. policymakers, highlight INTELSAT's strategies, and the U.S. Government's relative powerlessness to date in stopping these practices:

Pricing for Planned Domestic Services ("PDS").—As long ago as December 1985, the FCC and the Department of Commerce and State found that INTELSAT's PDS prices were not compensatory. FCC News Release, Mimeo No. 1516 (Dec. 13, 1985). In March 1986, Comsat presented to the INTELSAT Board of Governors a U.S. study which "concluded that INTELSAT's Planned Domestic Service prices were not cost-justified, since a number of the prices were too low to recover all of the appropriate costs of providing these services." Letter from Chairman Fowler to Sen. Danforth ("Fowler Letter"), Oct. 31, 1986, at 5. In the face of this study, INTELSAT lowered its PDS prices, and today countries are able to purchase INTELSAT transponders for domestic use at prices significantly below their cost.

Planned Domestic Capacity on New Satellites.—INTELSAT has attempted to justify its below-cost pricing of PDS capacity by claiming that the transponders involved are "excess," meaning that any incremental revenues received from them would be of benefit to the organization. This justification, however, while not accepted by the U.S. Government, does not in any event explain INTELSAT's PDS plans for the yet-to-be-built INTELSAT VI series of satellites. Despite U.S. protests, and despite the oxymoronic nature of "planned excess capacity," INTELSAT is deliberately building excess capacity into the INTELSAT VI series, with accompanying plans to market this capacity at below-cost prices. No rational business makes such plans, unless it is a monopolist intending to use below-cost offerings to undercut emerging competition.

Caribnet.—At both BG–67 and BG–68, the U.S. Government instructed Comsat to oppose INTELSAT's proposal to implement "a two-tier pricing policy for the Caribbean Basin . . . by offering a fifty percent discount on international digital satellite services within the region." Fowler Letter, supra, at 5. The BG nevertheless approved Caribnet, and Comsat has filed a tariff to offer these reduced-rate services from the United States. INTELSAT's targeting of the Caribbean Basin is far from coincidental; this market is a critical one both for Pan American Satellite ("PAS") and for those using U.S. domestic satellites to provide transborder services. *See id.* Thus, Caribnet—and other INTELSAT proposals intended to allow use of "domestic" transponders for "regional" service—are intended, in Senator Danforth's words, to "exploit [INTELSAT's] ample pricing flexibility to preempt competition and market entry." Letter to Chairman Fowler, Oct. 17, 1986, at 1.

Procurement of New Capacity.—Over the past few months, INTELSAT has indicated a procurement focus on Ku-band capacity, which would be used exclusively for services competing with those offered by U.S. separate systems. Although INTELSAT recently allowed an option to expire for an all-Ku-band satellite, it has released an RFP for short-term Ku-band capacity and hybrid capacity. INTELSAT's

plans to add Ku-band capacity have not been (and probably cannot be) justified, apart from meeting the perceived competitive threat from separate systems.

As these examples suggest, the process by which the U.S. seeks to influence INTELSAT's actions is totally ineffectual. In each instance in which the U.S., through instructions to Comsat, has opposed particular INTELSAT actions, INTELSAT has essentially ignored the U.S. protests and gone ahead with plans designed to destroy separate systems in general, and PAS's viability in particular. As PAS shifts its focus from the regulatory arena to the marketing one, INTELSAT will doubless intensify what has already become a concerted campaign to undermine U.S. policy.

The U.S. Government should not, and need not, accept this abuse by INTELSAT of its monopoly position. Not only does Comsat, on behalf of the U.S., own nearly one-fourth of INTELSAT, but nearly one-half of INTELSAT traffic originates or terminates in the United States. Given our dominant position in the organization, we should be seeking new ways to impress on INTELSAT the seriousness of our commitment to separate systems.

Some of the tools that the U.S. Government has at its disposal, but that it has not used to date, are the following:

Comsat's Rates.—The FCC has always taken a "hands-off" attitude with respect to the single most significant component of Comsat's rates, INTELSAT's charges. The FCC should change this attitude, piercing the veil that currently separates INTELSAT from its dominant user and owner, Comsat. Scrutiny of INTELSAT's rates is particularly critical in those areas (*e.g.*, IBS, video, PDS) where separate systems competition is likely and where Comsat may accordingly have a conflict between its Signatory and its INTELSAT ownership roles. Comsat should be required in each instance to explain how INTELSAT's charges are cost-justified, and should be required to include in its rate base the amount of the cross-subsidies involved in below-cost pricing.

Comsat Participation in INTELSAT Procurement.—In the past, the FCC has approved, on a relatively routine basis, virtually all Comsat requests to participate in INTELSAT construction of new satellites. Given INTELSAT's plans deliberately to construct "excess" capacity, while at the same time targeting Ku-band procurement at separate systems' core markets, the FCC's attitude toward Comsat's participation should change drastically. If Comsat is prohibited from participating in any new INTELSAT procurement, it is reasonable to assume that INTELSAT—faced with the prospect of non-participation by its largest owner—might listen more attentively to U.S. procurement-related concerns. The U.S. might also consider revoking Comsat's authorizations to participate in the construction and launch of the INTELSAT V-A F-13 and F-15 satellites, both of which will be used primarily for competitive services.

Balanced Loading.—The FCC currently requires AT&T to "balance" use of overseas satellite and cable facilities, thereby guaranteeing significant traffic to INTELSAT in its most lucrative market, international IMTS in the ATLANTIC Ocean Region—a market from which separate systems are excluded by virtue of Executive Branch restrictions. The FCC has indicated that it will re-evaluate its balanced-loading policy "no later than the third quarter of 1988," taking into account "INTELSAT's conduct in frustrating U.S. policy goals of achieving competition." Fowler Letter, *supra*, at 6. There is no reason why this re-evaluation process could not be accelerated.

COMMUNICATIONS SATELLITE CORPORATION,
March 6, 1987.

Hon. DANIEL K. INOUYE,
Chairman, Subcommittee on Communications of the Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR SENATOR INOUYE: Communications Satellite Corporation (COMSAT) respectfully submits the following views in response to the "Statement of Pan American Satellite" dated February 26, 1987 and submitted in connection with the Subcommittee's hearing on international telecommunications matters. We respectfully request that this letter be included in the record of the Subcommittee's hearing. (COMSAT is also responding by separate letter to a February 25, 1987 submission from Aeronautical Radio, Inc.)

Introduction.—Pursuant to the Communications Satellite Act of 1962, COMSAT is the United States Signatory to INTELSAT, the International Telecommunications Satellite Organization. Since its inception over twenty years ago, INTELSAT has succeeded in creating a global communications system that is without parallel.

Forty of its satellites have been designed, built and launched, and of these, fifteen are currently in orbit, carrying some two-thirds of all international telephone traffic and all international television traffic.

Pan American Satellite (PanAmSat) is one of the proposed separate international satellite systems that the FCC has authorized to compete with INTELSAT and COMSAT (consistent with certain restrictions imposed by the Executive Branch). Since receiving its construction permit, PanAmSat has purchased and modified a satellite, made tentative launch arrangements, and obtained a foreign correspondent (Peru). In addition, PanAmSat has nearly completed the successful coordination of its system under Article XIV(d) of the INTELSAT Agreement—with the complete cooperation and substantial assistance of COMSAT as U.S. Signatory. However, PanAmSat has not been able to demonstrate its financial qualifications to the FCC, despite having received numerous extensions of the deadline originally established for this purpose. Without such a demonstration, PanAmSat cannot obtain the final FCC authorization it needs to launch and operate its system.

PanAmSat's Charges.—In its statement, PanAmSat asserts that INTELSAT has "abuse[d] its protected status in order to exclude competition from the marketplace." It is difficult to see why PanAmSat has chosen to burden the record of these hearings with its comments. Its statement fails to mention any need for specific legislation or other Congressional action; rather, the matters of which it complains, and the corrective measures it says should be taken, are all within the province of the FCC or the Executive Branch.

Moreover, PanAmSat has raised all these issues before, both in FCC proceedings and in the context of the INTELSAT instructional process. It appears from its statement that PanAmSat's efforts are designed not to promote competition but to stifle it.

PanAmSat contends that INTELSAT is bent on "destroy[ing] separate systems in general, and [PanAmSat's] viability in particular." This claim is false and, in our view, myopic. INTELSAT and COMSAT face competition not only from separate international satellite systems, but also from submarine cables (both analog and fiber optic) and from domestic satellite systems offering transborder services. In fact, separate systems are actually the least threatening of all these competitors, because they are not yet operational. Moreover, PanAmSat too must vie not only with INTELSAT but with all these other systems and new technologies. Only time will tell whether it has the ability to do so effectively, but one thing is certain. If PanAmSat does become operational, COMSAT and INTELSAT will compete with it, fully and fairly.

Indeed, one reason for authorizing separate systems was precisely to make INTELSAT more competitive. In its Report and Order approving such systems, the FCC stated that new entry, "by forcing INTELSAT to compete for some of its business, would put pressure on INTELSAT to operate its satellite system more efficiently, minimize its costs consistent with reasonable quality of service standards, and set prices to reflect its costs in those markets where entry occurs." That is exactly what has happened, albeit more in reaction to other media than to separate systems. Both INTELSAT and COMSAT have worked hard to control costs, to provide new services, and to price both old and new services attractively. It is true that neither COMSAT nor the government has supported every step that INTELSAT has taken to meet competition, but there can be no doubt that a highly competitive INTELSAT is fully consistent with U.S. policy.

Pricing for Planned Domestic Service.—PanAmSat asserts that INTELSAT has priced transponders for planned domestic service (PDS) "significantly below their cost," and that a U.S. study concluded that PDS prices "were not cost-justified." These charges are false. It has never been disputed that the prices for PDS transponders far exceed the incremental cost of that service. Moreover, the U.S. study itself demonstrates that, in many instances, these prices also cover fully allocated costs—even though it is by no means certain that a fully distributed cost methodolgy is appropriate for a competitive market.

PanAmSat also asserts that the INTELSAT Board of Governors reduced rates for PDS in the face of a conclusion (in the U.S. study referenced above) that the rates earlier proposed by the Board were too low. In fact, the Board adjusted the earlier rates so that some were lowered and some were raised. Furthermore, even after those adjustments, the prices for the INTELSAT transponders most competitive with the domestic services contemplated by PanAmSat—that is, the C-band spots on INTELSAT VA (F-13) and (F-15)—continued to be priced at a level which the U.S. study concluded was at or above fully allocated cost.

Planned Domestic Capacity on New Satellites.—PanAmSat next asserts that INTELSAT is "deliberately building excess capacity into [its] INTELSAT VI series,

with accompanying plans to market this capacity at below-cost prices." This accusation is also false. It takes several years to design and build satellites, particularly in the case of a new series. Therefore, the traffic projections used to determine the basic capacity of these satellites must be done very far in advance. In this case, the INTELSAT VI satellites were designed on the basis of traffic projections done in 1981—before separate systems were even proposed. Subsequently, it became clear that these projections were overly optimistic, but by that time procurement contracts had already been signed and construction was well underway.

INTELSAT has made every effort to stretch out the deployment schedule for the INTELSAT VIs in order to minimize excess capacity while still meeting the connectivity requirements of the system. However, since there is no way to alter the basic design of the satellites, some excess capacity is certain to result. That being the case, it is reasonable to assume that INTELSAT will seek to market excess transponders on the VI series, just as it is currently doing with the VAs. However, no decisions have been reached in this regard, and any suggestion that this excess capacity was deliberately created is utterly without foundation.

Caribnet.—PanAmSat asserts that INTELSAT has targeted the Caribbean Basin in reduced rate service because this is a critical market for PanAmSat. However, PanAmSat has not shown how or where its prices are being undercut and. In fact, COMSAT does not know what prices PanAmSat is quoting in the Caribbean, if indeed it is engaged in any marketing effort there at all. In any event, the Caribnet offering is not solely, or even primarily, designed to meet the competition presented by PanAmSat's entry into the market. As indicated above, U.S. domsats offering transborder services provide much more significant competitive pressure than PanAmSat, as do existing cable systems and proposed fiber optic cable systems in the Caribbean. The Caribnet offering is a cost-based response to this pressure.

In its reply to PanAmSat's petition to suspend or reject COMSAT's tariff for Caribbean Business Service, COMSAT compared its proposed lease rate for a Caribnet transponder to the revenue requirements developed in connection with planned domestic service, using the same cost allocation methods cited in the U.S. study mentioned above in the PDS discussion. The Caribnet lease rate was higher than the revenue requirements developed using every one of the six methods referenced in the U.S. study. Moreover, COMSAT's proposed rates for Caribbean Business Service also satisfy all the requirements of the FCC's competitive necessity test, as articulated ini the agency's recent orders on dominant carrier pricing.

Procurement of New Capacity.—Finally, PanAmSat asserts that in recent months, INTELSAT "has indicated a procurement focus on Ku-band capacity, which would be used exclusively for services competing with those offered by U.S. separate systems." This too is false—but even if it were true, it would be a perfectly legitimate competitive response. The fact that PanAmSat thinks it is somehow illegitimate only demonstrates that it does not want to compete, but rather to avoid competition.

In fact, however, INTELSAT's activities in this area have been driven primarily by two factors. The first of these is the unexpectedly high demand for transatlantic Ku-band IBS service, and the second is the launch failure in May 1986 of the INTELSAT VA (F-14) spacecraft. Were there to be another failure during one of the two remaining VA launches, INTELSAT would be dangerously short of capacity in the Atlantic Ocean Region, particularly (but not solely) for IBS. Thus, there is ample justification for INTELSAT's procurement activities, wholly apart from any competitive pressures. In any event, INTELSAT has not made a decision to procure additional spacecraft, and COMSAT has not filed an application with the FCC. When and if such an application is filed. PanAmSat will have ample opportunity to comment.

In light of the alleged abuses discussed above, PanAmSat asserts that the United States "should be seeking new ways to impress on INTELSAT the seriousness of [its] commitment to separate systems." COMSAT can state with assurance that neither it nor INTELSAT needs any further convincing along these lines. However, PanAmSat must remember that INTELSAT is an international coopeative that is not subject solely to U.S. control. The only way the U.S. position can prevail in INTELSAT is through persuasion and consensus building. So far, those methods have been remarkably successful in most cases--for example, in obtaining a favorable result from the Board of Governors in PanAmSat's Article XIV(d) coordination. We do not believe PanAmSat's approach would be anywhere near as successful.

COMSAT's Rates.—The Commission, of course, currently reviews COMSAT's rates. However, PanAmSat declares that the Commission should also scrutinize INTELSAT's rates, thus "piercing the veil that currently separates INTELSAT from its dominant user and owner, COMSAT." PanAmSat's reference to piercing the veil is totally inappropriate, because COMSAT does not control or dominate INTELSAT.

Although COMSAT is the largest single owner of INTELSAT, it has but a minority interest—approximately 24 percent. In any event, the U.S. government does scrutinize INTELSAT's pricing to Signatories in the context of the instructional process, and COMSAT as Signatory takes substantive positions on INTELSAT pricing matters only after close consultation and approval by the government.

COMSAT Participation in INTELSAT Procurement.—Consistent with the Satellite Act, COMSAT must obtain FCC authority to participate in INTELSAT procurements. In this regard, PanAmSat has two suggestions. First, it says that the Commission should prohibit COMSAT from participating in any new procurement, "given INTELSAT's plans deliberately to construct 'excess' capacity, while at the same time targeting Ku-band procurement at separate systems' core markets." We have demonstrated above that both of these "givens" are false. Accordingly, there is no need for such a prohibition. PanAmSat's second suggestion is that the Commission should consider revoking COMSAT's existing authorizations to participate in the next two INTELSAT launches—because those satellites "will be used primarily for competitive services." As a factual matter, PanAmSat is wrong again; those satellites will be used mainly for public switched service, which separate systems are not authorized to provide. But even so, there could be no better demonstration of PanAmSat's true aims than this suggestion. Clearly, PanAmSat does not want to compete; rather, it wants to impede competition any way it can. Therefore, this suggestion is totally inappropriate.

Balanced Loading.—Finally, PanAmSat suggests that the FCC should accelerate its recommendation of the policy by which it regulates AT&T's loading of IMTS circuits on cable and satellite facilities. However, as PanAmSat admits, this issue has nothing to do with separate systems. In our view, therefore, it should be dealt with as a separate matter.

Thank you for the opportunity to present these views.

Sincerely,

BRUCE L. CROCKETT.

ARINC,
Annapolis, MD, February 25, 1987.

Hon. DANIEL K. INOUYE,
Chairman, Subcommittee on Communications of the Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR SENATOR INOUYE: Aeronautical Radio, Inc. ("ARINC"), respectfully submits this letter to the Subcommittee on Communications of the Committee on Commerce, Science and Transportation and asks that it be included in the record of the Committee's February 26, 1987, hearing on international communications issues.

We concur with your timely decision to hold hearings to review current development in U.S. international communications policy. In our statement, we will focus the Committee's attention on the ongoing efforts by the International Maritime Satellite Organization ("INMARSAT") to introduce aeronautical communications satellite services and United States public policy with respect to these efforts.

ARINC is a corporation owned principally by the U.S. air transport industry. It was formed in 1929 at the request of the Federal Radio Commission (predecessor of the FCC) for the purpose of providing aeronautical communications services to aviation. Today, ARINC provides aeronautical communications services to some 2,200 users and is relied upon by aviation for critical safety-related services.

With respect to INMARSAT's introduction of aeronautical communications satellite services, ARINC's concern is to assure that access be affored on a competitive basis. Should INMARSAT's space segment aeronautical services be offered to U.S. users on a noncompetitive basis—as INMARSAT's maritime services are now offered via COMSAT—the U.S. air transport industry would be forced to pay excessive monopolistic user fees that will harm the airlines' ability to competitively provide low-cost basic transportation.

U.S. public policy governing access to INMARSAT's space segment is an issue that the Congress will, in all likelihood, have to resolve by amendment to the International Maritime Satellite Telecommunications Act of 1978 (47 U.S.C. SS 751-757) (the "INMARSAT's Act"). In ARINC's view, the Congress should provide all users with competitive, authorized access to INMARSAT's aeronautical space segment in contrast to perpetuating the monopoly of the Communications Satellite Corporation ("Comsat") to offer INMARSAT's aeronautical services to U.S. users.

In the balance of this statement, ARINC will (1) summarize INMARSAT's efforts to provide aeronautical communications services, (2) review the Federal Communi-

cations Commission's r nt order concluding that Comsat does not have the legal authority to provide ae.onautical services via INMARSAT on monopoly basis, and (3) describe certain developments, particularly within the Executive Branch, that could affect the Congress's review of this issue.

I. INMARSAT'S EFFORTS TO PROVIDE AERONAUTICAL SATELLITE SERVICES

Currently, INMARSAT is authorized to provide only maritime satellite services. The INMARSAT Assembly of Parties has proposed amendments to its Convention and its Operating Agreement to permit the provision of aeronautical satellite services. The amendments were adopted by the INMARSAT Assembly of Parties in October 1985 and are awaiting ratification. In order for the amendments to the Convention and Operating Agreement to enter into force, two-thirds of the INMARSAT Parties, representing two-thirds of INMARSAT's ownership as of the ratification date, must approve the amendments. To date, the United States, which exercises approximately 32 percent of the voting power needed for ratification, has not ratified the amendments.[1]

During the course of INMARSAT's deliberations, Comsat obtained permission from the FCC to help fund the procurement of the three new spacecraft. The Commission authorized Comsat's expenditure on the basis that the new satellites were necessary for INMARSAT's maritime satellite communications system. (See Memorandum Opinion, Order and Authorization, FCC 85-666, File No. CSS-85-002, released January 7, 1986; recon den. Memorandum Opinion and Order, FCC 86-260, File No. CSS-85-002, I-S-P-85-002, released May 28, 1986.) The Federal Communications Commission's authorization did not, however, expressly permit specific expenditures by Comsat to fund the construction or operation of INMARSAT's aeronautical satellite facilities. Therefore, on June 16, 1986, Comsat sought such further authorization from the Commission. Subsequently, Comsat also sought authority to lease space segment capacity on INMARSAT satellites to provide aeronautical communications services to ARINC. ARINC opposed both of Comsat's requests.

II. THE FEDERAL COMMUNICATIONS COMMISSION'S DECISION ON COMSAT'S APPLICATIONS

On January 12, 1987, the Federal Communications Commission (the "Commission") released a memorandum opinion and order in which the Commission addressed and then denied Comsat's June 16, 1986, application to participate in INMARSAT's program to modify three spacecraft by increasing the aeronautical mobile satellite service bandwidth on each. (See Memorandum Opinion and Order, FCC 87-22, File No. CSS 86-005-M(2), ITC 86-181, released January 12, 1987.) In that order, the Commission also denied Comsat's request to provide aeronautical service to ARINC.

In denying Comsat's applications, the Commission adopted ARINC's position that Comsat does not possess the legal authority to participate in the provision of aeronautical services via INMARSAT on a monopoly basis. Upon analyzing the language and legislative history of the INMARSAT Act, the Commission concluded that:

"[the INMARSAT Act] does not permit [the Commission] to authorize Comsat to participate in aeronautical services via INMARSAT on a monopoly basis. We conclude that the Act confers a monopoly status on Comsat that is limited to the provision of maritime satellite services, and that the legislative history of the Act clearly shows that Congress intended Comsat's monopoly role in INMARSAT to be so limited."

(See Comsat Order at para. 35.) In reaching this conclusion, the Commission quoted Section 502(a) of the INMARSAT Act, which states:

"it is the policy of the United States to provide for the participation of the United States in the [INMARSAT] system. Such system shall have facilities and services which will service maritime commercial and safety needs of the United States and foreign countries."

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[1] Prior to the Assembly's adoption of these amendments, INMARSAT had entered into a contract for the construction of three new-generation satellites to upgrade its existing maritime communications services, which also provided for one megahertz of aeronautical bandwidth. At its July 1986 meeting, the INMARSAT Council decided to provide capacity for long-term aeronautical service needs by modifying the design of those spacecraft to provide an additional two bidirectional megahertz of aeronautical bandwidth. As the United States' sole designated representative to INMARSAT, Comsat participated in the INMARSAT session at which these decisions were made.

(See Comsat Order at para. 37.) The Commission then explained and justified Congress' decision to confer monopoly status on Comsat for the provision of maritime satellite services, noting that Congress expected those services to operate as a single, integrated system. The Commission then contrasted the provision of aeronautical services to maritime services, concluding that aeronautical services are more likely to be offered on a competitive basis.

The Commission concluded that the expansion of Comsat's monopoly role to include aeronautical satellite services was beyond its authority, and it expressly urged Congress to conduct review of the issue. (Comsat Order at para. 41, emphasis added.) The Commission also announced plans to commence a rulemaking proceeding to address certain outstanding domestic issues, such as whether Comsat should be authorized to provide aeronautical services via INMARSAT on a non-exclusive basis and whether the Commission has authority to grant competitive authorized access to INMARSAT's aeronautical space segment, *i.e.*, without requiring use of Comsat's, or another intermediary's, facilities. A notice of proposed rulemaking has not yet been released. In addition, Comsat has filed a notice of appeal of the *Comsat Order* in the U.S. Court of Appeals for the District of Columbia Circuit.

III. U.S. RATIFICATION OF THE INMARSAT AMENDMENTS PRIOR CONGRESSIONAL REVIEW

In its Comsat Order, the Commission acknowledged that the provision of aeronautical services by the INMARSAT system requires amendments to INMARSAT's Convention and Operating Agreement and urged the United States to approve the proposed amendments in anticipation of resolving the outstanding domestic competitive questions. (Comsat Order at para. 33.) Based on ARINC's recent discussions, it appears that the relevant Executive Branch agencies (Departments of State and Commerce) may be following the FCC's guidance in that they are considering ratification of the INMARSAT aeronautical amendments which in our view is not authorized by the Act.

In addition, INMARSAT is proceeding with its plans to provide aeronautical services via satellite. Notwithstanding the Commission's order that Comsat's role via INMARSAT is limited to maritime satellite communications, these issues are being debated and resolved in INMARSAT's sessions in which COMSAT participates as the sole U.S. representative.

In view of the above, it is clear that the public interest will be best served if the United States defers ratification of the INMARSAT amendments until the Congress by legislation determines the domestic and international issues related to the provision of INMARSAT aeronautical services. ARINC believes the Executive Branch does not possess the legal authority to ratify the pending INMARSAT amendments, since the Congress has authorized the United States to participate in INMARSAT only to the extent of its maritime services.[2] Just as troubling is Comsat's role as the sole U.S. representative to the INMARSAT committees that are deciding the issues regarding aeronautical satellite services. In all likelihood, Comsat's interests in preserving its monopoly access to INMARSAT will differ from policy enunciated by the Congress. Ratification of the INMARSAT amendments prior to the Congress's resolution of the domestic competitive issues will only further entrench Comsat in this preferred position.

In conclusion, ARINC urges the Congress to:

Ensure that the U.S. Executive Branch agencies do not ratify the INMARSAT amendments until Congress expresses U.S. policy by amending the 1978 Act as appropriate.

Afford U.S. users competitive authorized access to INMARSAT's aeronautical space segment services if Congress determines that INMARSAT should be permitted to offer aeronautical services and, if so, what safeguards are necessary to assure that INMARSAT practices are not anti-competitive, e.g., cross subsidies between maritime and aeronautical services.[3]

With competitive authorized access to INMARSAT's services by U.S. users, ARINC supports INMARSAT's expansion of its services into aeronautical communi-

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[2] In fact, ARINC has been forced to initiate federal court litigation against the Executive Branch agencies to prevent the ratification of the INMARSAT amendments prior to Congressional action.

[3] One means of accomplishing this would be to designate a user-owned U.S. entity to be the INMARSAT representative for aeronautical satellite communications purposes. Such was proposed by Senator Hollings in S. 2211 introduced in the First Session of the 95th Congress during the original debate on the INMARSAT Act.

cations, the United States' ratification of the INMARSAT amendments, and Comsat's nonexclusive participation in INMARSAT's aeronautical program.

Thank you for the opportunity to present these views.

Yours truly,

GEORGE F. MANSUR,
President.

BELLSOUTH CORP.,
Washington, DC, March 6, 1987.

Hon. DANIEL K. INOUYE,
Chairman, U.S. Senate Commerce Subcommittee on Communications, Washington, DC.

DEAR MR. CHAIRMAN: On February 26, 1987, hearings were held by the U.S. Senate Commerce Subcommittee on Communications on International Communications Issues. During the hearings there was a discussion of the National Telecommunications & Information Agency (NTIA), Department of Commerce, report on the impact on U.S. trade of changing the AT&T Consent Degree. Specifically, it was suggested that a federal government agency should have approval authority over any joint manufacturing venture between a Bell Operating Company and a foreign-based company for central office switching equipment. This requirement would be imposed even if the venture were located in the U.S. and employed U.S. workers.

The BellSouth Corporation opposes this suggestion for several important reasons. First, such a policy is obviously discriminatory in that it would apply to only seven American firms. Second, it would thwart U.S. efforts to improve its global competitiveness by discouraging R&D and corresponding technological advances by these seven large U.S. hightech companies. Third, it would handicap key U.S. industrial firms through the addition of yet another layer of regulation in the telecommunications market which is becoming increasingly global and competitive. Finally, it could have an adverse effect on U.S. local telephone customers by limiting technological advances which in turn would help hold down the cost of providing service.

In short, any benefit this policy might have on the trade balance would pale in comparison to the harm done to the overall interests of the U.S.

Attached is a fuller critique of the NTIA report underlying the suggested policy. I would appreciate these documents, as well as this letter, being entered in the record of the hearings.

Thank you for your consideration of our views in this matter.

Sincerely yours,

R.L. MICKEY MCGUIRE,
Senior Vice President-Governmental Affairs.

Attachment.

STATEMENT OF U S WEST, INC.

TELECOMMUNICATIONS TRADE: RAMIFICATIONS FOR THE DOMESTIC TELECOMMUNICATIONS EQUIPMENT AND SERVICES MARKETS AND FOR U S INTERNATIONAL COMPETITIVENESS

The trade debate has addressed unfair foreign trade practices affecting telecommunications equipment. Proposals have been offered in both the House and the Senate over the past few years to achieve an open world trade system for telecommunications products and services. The focus of the debate has been on opening foreign markets to U.S. equipment manufacturers and suppliers of telecommunications services. However, if those markets are not opened and proposed sanctions are enforced, unfortunate and unintended ramifications will result.

Competition in the network equipment portion of the telecommunications market will be substantially reduced, resulting in higher prices of network equipment and thus higher prices of domestic telecommunications services for consumers and businesses, particularly small and mid-size businesses that depend on public networks for their telecommunications services more than large businesses do. The technological base of the public telecommunications networks will be weakened because, without the competitive threat of alternative sources of supply, protected domestic network equipment suppliers will be able to hold back the speed of introduction of new technology in order to enhance the profits of affiliated telecommunications service providers. Because telecommunications is a key infrastructure industry, higher prices and less advanced technology in the public telecommunications networks will result in a less productive and less competitive American economy.

U S WEST's three major subsidiaries, Mountain Bell, Northwestern Bell, and Pacific Northwest Bell Telephone Companies, serve 40 percent of the contiguous United States and expend approximately $1.7 billion on telecommunications network plant and equipment each year. The vast majority of equipment they purchase is from manufacturers with production facilities located in the United States. However, across to an international telecommunications equipment market is critical to these telephone companies' continued provision of low-cost and innovative services through state-of-the-art technology since there are only two or three major manufacturers of computer switching equipment in the United States.

Competition from international suppliers helps to keep the domestic suppliers' prices lower.

The U S WEST telephone companies provide telephone service in some rural and sparsely populated areas. Providing service in these areas requires a different scale of equipment than used in more urban markets. Without the spur of foreign competition, manufacturers will respond to the requirements of the upper end of the national market to the detriment of service to rural areas.

Providers of local and long distance communications services are becoming increasingly competitive among themselves. If manufacturers who are integrated with long distance companies are protected from foreign competition, they will have the capability of controlling the introduction of technology to their competitive advantage.

Certain products—PBXs and telephones—are increasingly available only from foreign sources (whether foreign or domestically owned). Voice data storage, forwarding, and other "information services" are provided through these types of equipment. Restricting sources of supply will raise prices for consumers and limit their access to these innovative services.

The line-of-business restrictions imposed on the Bell Operating Companies by the Modification of Final Judgment in the AT&T divestiture specifically prohibit U S WEST from providing information services and from manufacturing telecommunications equipment domestically. Domestic telecommunications policies that prohibit U S WEST from participating in the telecommunications equipment market and information services must be changed. Half of the productive capacity of the telecommunications industry within the United States is prohibited from participating in these critical markets. The Department of Justice has recommended that the line-of-business restrictions affecting manufacturing and information services be lifted, and those recommendations are before the Court.

U.S. trade policy should not restrict the telecommunications equipment market—particularly the market for network equipment—while the impediments of the AT&T divestiture agreement on the Bell Operating Companies remain intact. Now is not the time for Congress to enact a telecommunications trade proposal with its potential for closing the U.S. market. Until the Court frees U S WEST to participate fully in these businesses, a truly international market must be maintained.

THE IMPACT OF CHANGING THE AT&T CONSENT DECREE ON U.S. TRADE

Summary

The National Telecommunications and Information Administration (NTIA), Department of Commerce, issued a report February 4, 1987 that purportedly assesses the U.S. trade implications of changing the AT&T consent decree. More particularly, the NTIA study addresses line-of-business restrictions in the AT&T decree that prohibit the divested Bell Companies from providing **long distance** and **information services** and from **manufacturing telecommunications equipment**. NTIA's Trade Report concludes that removal of these restrictions would not hurt, and might well help, U.S. trade -- with two very important exceptions. These are:

- *Bell Companies should not be permitted to joint venture with foreign manufacturers in the production of central office switching equipment (even if produced in the U.S.) unless the host countries of those foreign firms (e.g., Japan in the case of NEC or Hitachi) agree to fully open their markets to U.S. suppliers; NTIA or some other federal bureaucracy also would make the determination whether foreign markets are "open" or "closed."*

- *Allowing the Bell Companies to provide long distance service could erode AT&T's earnings, and reduce its ability to finance R&D programs that are critical to U.S. competitiveness in global telecommunications markets.*

However well intended, NTIA's recommendations will hurt, rather than help, U.S. trade. The recommendations will discourage the nation's leading telecommunications firms, AT&T and the Bell Companies, from becoming more efficient out of competitive necessity. And unless and until these firms learn to compete more effectively in domestic markets, they will be less of a force in global markets. NTIA's proposals to retain the most protectionist elements of the AT&T consent decree under the guise of U.S. trade, therefore, are neither reasonable, nor consistent with the government's long standing commitments to competition in domestic markets, and promotion of free trade in international ones.

In particular, NTIA's proposals on the AT&T consent decree:

Would Unnecessarily Restrict Total R&D Spending By The U.S. Telecommunications Industry and Threaten U.S. Leadership In New Technology.

NTIA's fears notwithstanding, it is speculative to suggest that AT&T will substantially reduce R&D spending, even in the face of lower earnings, because AT&T's ability to innovate new technology through its R&D programs is critical to its competitiveness in global markets. Even if this were a legitimate possibility, however, the Federal government should not attempt to protect AT&T's profits at the expense of other U.S. businesses. Instead, public policy should encourage all American telecommunications firms, including the Bell Companies, to invest efficiently in R&D. By doing so, those policies will diversify control over the nation's R&D resources in telecommunications, and minimize the inherent risk of putting all U.S. R&D "eggs" in the basket of any one firm.

Equally important, line-of-business restrictions in the AT&T consent decree have all but eliminated Bell Company incentives to invest in R&D because the companies have no practical opportunities to recoup these costs. Removal of the restrictions, therefore, will do more than promote healthy competition between the nation's two premier telecommunications research organizations -- AT&T's Bell Labs, and the Bell Companies' own R&D consortium, Bell Communications Research Inc. It also will encourage the Bell Companies to bring their R&D spending up to competitive levels (e.g., from 1.3 percent of sales currently to the 5-6 percent that AT&T and most other "high tech" firms spend

annually on R&D). This, in turn, would increase total U.S. industrial R&D spending on telecommunications by a factor of two or more and, in time, substantially strengthen U.S. competitiveness in global telecommunications markets.

Would Discriminate Against Certain American Firms In Favor Of Other U.S. Companies and Established Foreign Manufacturers.

NTIA's proposal to "police" joint ventures between the Bell Companies and foreign manufacturers is patently discriminatory. If it is U.S. policy that such controls are necessary to force other nations to open their telecommunications markets to U.S. suppliers, then those controls should apply to all U.S. telecommunications firms equally. (See Appendix A for selected joint ventures between U.S. and Japanese and European manufacturers that are involved in telecommunications.) To single out the Bell Companies is not only grossly unfair, but also will invite their competitors -- both foreign and domestic -- to use NTIA's recommended regulatory procedures to prevent a major segment of the U.S. telecommunications industry from competing here and abroad. This will hardly promote U.S. trade.

NTIA also presumes that the Bell Companies will immediately joint venture with foreign firms if the manufacturing restriction is removed. Actually, partnerships with other U.S. manufacturers, including AT&T, are equally if not more likely to occur.

Would Subject the Bell Companies To Yet Another Layer Of Federal Regulation When Telecommunications Markets Are Becoming More Competitive and Increasingly Global In Nature.

In the summary of its Trade Report, NTIA correctly observes: "turning around the present adverse trade situation will require mobilizing all of our communications industry resources. The Bell Companies can make a difference, and they ought to be afforded the freedom to do so." It is especially perplexing, therefore, that even in light of this finding NTIA would propose subjecting the Bell Companies to yet another layer of Federal regulation (by policing joint ventures), or suggest that these companies not be allowed to compete in long distance markets in order to protect the U.S. trade situation. NTIA's policy recommendations are simply inconsistent with the facts and findings contained in its own Trade Report.

Would Very Possibly Harm U.S. Relations With Some of the Nation's Most Important Industrial Trading Partners.

Even if NTIA were to establish seemingly reasonable generic guidelines for approving or denying joint ventures between U.S. and foreign firms, day-to-day administration of these regulations would likely be haphazard, highly arbitrary, and complex enough to prevent the Bell Companies from successfully negotiating joint ventures with foreign firms, even when such agreements would clearly promote U.S. trade interests. The reason is that NTIA, or any other Federal bureaucracy, would not be able to consistently and accurately assess the effects of proposed joint ventures on U.S. trade because of the rapidly changing dynamics of increasingly competitive (and complex) global telecommunications markets. Determining whether a foreign market is "open" or "closed" to U.S. suppliers is not a quick or easy chore. Making these determinations could take years, and effectively paralyze the ability of the Bell Companies to compete internationally.

Finally, to the extent that the government's administration of these guidelines is perceived to be wholly arbitrary, some U.S. trading partners who come up on the short end of the review process may be prone to retaliate by imposing equally arbitrary restraints on U.S. firms in their respective national markets. In any event, benefits that the U.S. might realize from NTIA's proposal to "police" Bell Company joint ventures will pale in comparison to the cost of this type of regulation.

NTIA TRADE REPORT AND THE AT&T CONSENT DECREE

Background

Later this year, U.S. District Court Judge Harold Greene will consider modifying or eliminating line-of-business restrictions in the AT&T consent decree that now prevent the Bell Companies from providing long distance and information services or manufacturing telecommunications equipment.

- In a report filed with Judge Greene on February 2, the DoJ recommended that the court replace line-of-business restrictions with various regulatory safeguards that will **actively** promote competition in all telecommunications markets, including local telephone service markets. Under the DoJ's recommendations:

  - Bell Companies would be allowed to **manufacture telecommunications equipment** and provide **information services** subject to compliance with cost accounting, equal network access, technical and customer billing information disclosure, and other regulatory safeguards -- safeguards that the FCC has adopted to eliminate any meaningful threat of cross subsidization or other types of anti-competitive behavior by the Bell Companies.

  - Bell Companies would be allowed to provide long distance service at some later date, if they comply with the same guidelines outlined above, **plus removal of regulatory policies** that arguably prevent or discourage competition in local telephone markets. In the meantime, the Bell Companies could provide long distance service outside their respective geographic regions.

- The essence of the DoJ recommendations also has been supported by the Department of Defense (the world's single largest user of telecommunications), the FCC and, heretofore, the Department of Commerce.

- Judge Greene will reconsider the line-of-business restrictions in the AT&T consent decree later this year, following his review of public comment on the DoJ recommendations.

NTIA TRADE REPORT AND THE AT&T CONSENT DECREE

Background
(continued)

NTIA's Trade Report apparently was prepared as input into Judge Greene's evaluation of the AT&T consent decree. However, as prospects for trade legislation continue to improve, the Report will be used by some to try to persuade Congress to include certain protectionist elements of the AT&T consent decree in trade legislation.

- Policy proposals outlined in the NTIA Trade Report differ from the DoJ's recommendations in that the Report suggests that the Bell Companies should continue to be restricted, in some instances, from producing central office switching equipment, or providing long distance service. In particular NTIA would:

  - Condition any joint venture between a Bell Company and a foreign manufacturer on approval by NTIA or some other federal bureaucracy. This approval, in turn, presumably would depend on the willingness of that foreign manufacturer's home country (e.g., Japan in the case of NEC, or West Germany in the case of Siemens) to establish reciprocal trade agreements with the U.S.

  - Possibly prevent, or limit, Bell Company entry into domestic long distance service markets on the grounds that increased competition would hurt AT&T's profitability and, hence, U.S. trade and technological advancement.

- NTIA's concern about the trade impact of relaxing line-of-business restrictions on manufacturing central office equipment and providing long distance service apparently relates to R&D spending. NTIA seems to be concerned that:

  - Major cuts in AT&T's R&D spending could threaten U.S. competitiveness in global markets because (1) AT&T is now the only world class U.S. supplier of telecommunications equipment, and (2) new telecommunications technology is becoming increasingly expensive to develop (e.g., up-front R&D spending on the next generation of central office switches is expected to be on the order of $2 billion per manufacturer).

  - AT&T may be forced to reduce R&D spending if Bell Company entry into highly profitable long distance and central office equipment markets erodes AT&T's earnings.

NTIA TRADE REPORT AND THE AT&T CONSENT DECREE

Background
(continued)

If nothing else, the NTIA Trade Report focuses attention on two basic public policy issues that should be addressed head-on in the upcoming debate over the future of line-of-business restrictions in the AT&T consent decree.

- Will the productivity of industrial R&D programs in this country, and U.S. trade interests in global telecommunications markets be better served by public policies that:
  - Encourage new entry into all domestic telecommunications markets in order to maximize the number of U.S. suppliers that compete with foreign firms both here and abroad, or
  - Allow AT&T to dominate domestic equipment and long distance service markets, to the exclusion of other American companies, in order to limit foreign access to the U.S. market, and centralize the management of R&D resources?

- Depending on whether U.S. trade interests will be better served by a competitive or concentrated domestic telecommunications market structure, what, if any, changes in existing public policies are needed to serve those interests?

Resolving issues outlined above should depend, in turn, on a reasonably accurate assessment of two related market issues:

- Probable differences in the levels and productivity of U.S. industrial R&D spending that would result from a highly competitive or highly concentrated domestic telecommunications market structure.

- Relationships between the level and productivity of R&D spending, and the strength of U.S. competitiveness in global telecommunications markets.

The balance of this paper addresses each of the issues raised above, beginning with the latter two.

AT&T CONSENT DECREE AND ITS RELATIONSHIP TO R&D SPENDING AND U.S. TRADE

AT&T's R&D Spending v. Its Major Foreign Competitors

While NTIA's concern for AT&T's R&D spending in a more competitive environment is perhaps understandable, it is a concern based far more in fear than in fact.

- Like most "high tech" firms, telecommunications equipment manufacturers generally spend from 5 to 8 percent of their annual sales on R&D. AT&T and its major foreign competitors are no exceptions.

($ Billions: 1985)

Firm	Total Corp. Sales	R&D Spend	R&D as % Sales	Telecom. Equipment Total Sales	Telecom. Equipment Global Mkt Share
AT&T	$34.9	$2.210	6.3%	$12.2	15%
Bell Canada/ No. Telecom	13.6	.924	6.8%	8.3	10%
Hitachi	29.5	1.740	5.9%	8.5	11%
Matsushita	24.9	1.185	4.8%	4.3	5%
NEC	13.1	.927	7.1%	4.2	5%
ITT/Intl.Std. (Fra, U.K.)	16.8	1.464	8.7%	8.8	11%
Siemens (Ger)	12.9	NA	NA	1.7	2%
Ericsson (Swe)	4.3	.369	8.6	3.1	4%
Plessey (UK)	2.2	.120	5.5%	1.0	1%

Source: Compustat

- AT&T's total outlays on R&D also exceed those of its two largest competitors in global telephone equipment markets -- Hitachi and ITT/International Standard Electric by nearly 30 to 50 percent, respectively.

- AT&T's R&D expenditures, as well as its total annual revenues and its telephone equipment sales, literally dwarf comparable figures for virtually all other major foreign manufacturers of telecommunications equipment.

In short, AT&T -- by a substantial margin -- is the largest of the large world class telecommunications equipment manufacturers. Because it sells more equipment globally than any other firm, AT&T also is able to commit more capital to R&D than any of its competitors. At issue, therefore, is not AT&T's ability to finance R&D, but rather the company's effectiveness in managing its R&D programs in ways that will strengthen U.S. competitiveness in global markets, and whether other U.S. companies should be discouraged by government policies from increasing their own R&D commitments.

AT&T CONSENT DECREE AND ITS RELATIONSHIP TO R&D SPENDING AND U.S. TRADE

Competitive v. Concentrated R&D Spending

Where at all practical, the U.S. should not rely on AT&T, or any single firm, to finance the vast majority of industrial R&D spending in any "high tech" line-of-business that is crucial to long term national interests.

- The Japanese have long understood that returns on R&D investment can best be maximized, not by concentrating R&D resources in the hands of a single firm, but by encouraging competition between R&D laboratories of their major telecommunications equipment manufacturers.

Distribution of R&D Spending By Leading Japanese and U.S. Telecommunications Equipment Manufacturers
($ Millions: 1985)

JAPANESE FIRMS			U.S. FIRMS		
Hitachi	$1,740	(32%)	AT&T	$2,210	(75%)
Matsushita	$1,185	(22%)	GTE	$ 313	(11%)
NEC	$ 927	(17%)	All Others	$ 403	(14%)
All Others (est.)	$1,600	(29%)			
Total	**$5,542**	**(100%)**		**$2,926**	**(100%)**

Note: R&D expenditures are corporate totals and include spending on products other than telecommunications equipment and services.

Sources: Compustat, Business Week, NTIA

- In sharp contrast to Japan, nearly **75%** of all industrial R&D spending by U.S. telecommunications equipment manufacturers is now being conducted by AT&T. Placing this much reliance on AT&T to maintain a U.S. edge in new technology is risky because no one industrial research laboratory -- including Bell Labs -- has a monopoly on good ideas. Recent trends in the productivity of competing equipment manufacturers illustrate this fact.

AT&T CONSENT DECREE AND ITS RELATIONSHIP TO R&D SPENDING AND U.S. TRADE

Competitive v. Concentrated R&D Spending

(continued)

- Despite efforts to reduce its costs by moving production capacity offshore, AT&T's productivity is still not on par either with its chief foreign rivals or those U.S. firms that have entered the telecommunications equipment market since the breakup of the former Bell System was announced. See the table below and Figure 1.

Annual Sales Per Employee: 1985

All U.S. Telecom. Manufacturers (Avg.)	**$85K**
AT&T Technologies	$88K
Other Estab. Producers (e.g., GTE)	$84K
New Market Entrants (Since 1983)	$160K
Major Foreign Manufacturers (Avg.)	**$105K**

Source: Compustat

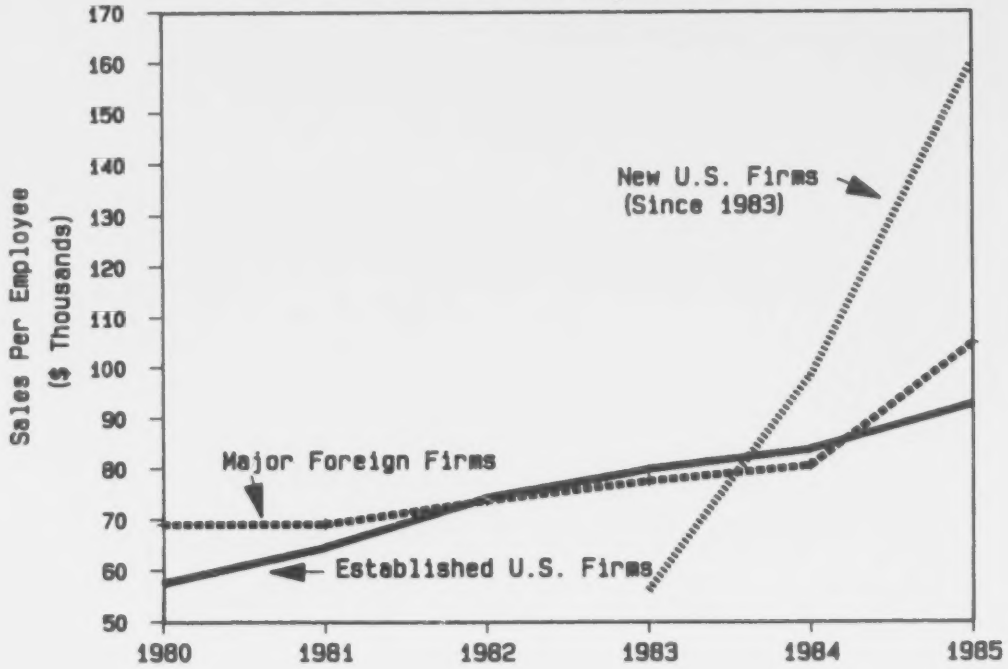
- As NTIA's Trade Report recognizes (see p. 112), it takes time for a firm to develop R&D skills and resources and even more time to realize a return on this type of investment. Thus, for the same reasons that money managers diversify investment portfolios (i.e., to minimize or control investment risk), policymakers who are at all concerned about AT&T's ability to compete should encourage other U.S. firms, including the Bell Companies, to develop their own R&D capabilities. Because line-of-business restrictions in the AT&T consent decree have precisely the opposite effect, NTIA's interest in improving U.S. trade would be well served by the DoJ recommendations to replace the anti-competitive restraints with pro-competitive policy alternatives (e.g., equal network access, cost accounting and related regulatory safeguards); but without the type of regulatory oversight NTIA proposes for itself.

Otherwise, U.S. competitiveness in global telecommunications markets will remain overly dependent on how well or poorly AT&T manages its R&D programs and other resources. U.S. trade policies, therefore, should not be designed to protect AT&T's earnings under the ruse that AT&T needs or somehow merits more time to fully adjust to the competitive, post-divestiture market environment. Rather, trade policies should encourage all U.S. telecommunications firms, including the Bell Companies, to invest more efficiently in those R&D programs that are essential to U.S. leadership in innovating superior technology, and to do so immediately.

Figure 1

Productivity in Telecommunications Markets

U.S. vs. Foreign Firms



Source: Standard and Poor's Compustat Service

AT&T CONSENT DECREE AND ITS RELATIONSHIP TO R&D SPENDING AND U.S. TRADE

Line-of-Business Restrictions and Incentives to Invest In R&D

Data presented in the NTIA Trade Report demonstrate that removal of the line-of-business restrictions on the Bell Companies would diversify the management of R&D resources within the U.S. telecommunications industry. Removing those restraints also would increase total industrial R&D spending on telecommunications -- possibly by a factor of two or more.

- Data presented in T-8 of the NTIA Trade Report indicate that R&D spending by the Bell Companies is about **60 percent below** the average for all U.S. industries, and about **80 percent below** most "high tech" American firms including AT&T and IBM.

R&D Expenditures in Telecommunications and Information Service Industries: 1985
($ Millions)

Industry Group/Firm	Annual Sales	Pre-Tax Profits	Annual R&D Expend.	R&D as % Sales	R&D $ Per Employee
Telecommunications					
AT&T	34910	1557	2210	6.3%	$6,545
Bell Companies	62786	7465	800	1.3%	$1,445
Other U.S. Firms	22391	-249	595	2.7%	NA
Computer Equipment	98155	8069	7554	7.7%	$7,562
IBM	50056	6555	3457	6.9%	$8,525
Semiconductors	10861	146	1165	10.7%	$6,491
Electronics	52100	1785	2294	4.4%	$3,168
All Industry Composite ($ Billions)	1553	61	48.8	3.1%	$3,758

Source: NTIA Trade Report, p.25.

- On the basis of these and other data, the NTIA Trade Report quite correctly concludes that "it is ... clear the Bell Companies by nearly any measure are only marginal players in telecommunications research and development today." (p. 26) And that the reason they do not spend more on R&D stems from their inability to "exploit research results (i.e., recoup R&D investment) through manufacturing..." and presumably other restricted lines of business (p. 24).

AT&T CONSENT DECREE AND U.S. COMPETITIVENESS

NTIA's Trade Report: Policy Recommendations v. Major Findings

The NTIA Trade Report suggests that the Bell Companies might be precluded from joint venturing with foreign firms in the production of central office switching equipment, or providing long distance service, on the grounds that both of these restrictions are somehow necessary to encourage R&D spending and protect U.S. trade interests. NTIA's support for line-of-business restrictions out of concern for U.S. industrial R&D spending is at odds with the facts. That support also is inconsistent with nearly every other major finding contained in its Trade Report.

* At several places in the Report (e.g., p. vi in the Executive Summary), NTIA notes that "eliminating judicial [i.e., line-of-business] restrictions on the [Bell] companies that comprise half of America's human and financial resources in this key high-tech sector could yield positive [trade] results, particularly over time." At page 98, NTIA states further that "to the maximum extent, customer acceptance or rejection of [products or] services should be a function of market, not Government, determinations."

  - Despite these conclusions, NTIA's policy recommendations would effectively maintain regulatory barriers to market entry in central office equipment and interLATA toll markets. In addition, NTIA's proposal to "police" possible joint ventures involving foreign manufacturers would subject the Bell Companies to yet another layer of regulation, at a time when all telecommunications markets are becoming more competitive.

* At page 52 of its Report, NTIA notes: "in 1975, ... combined U.S. exports and imports represented only about 5 percent of total U.S. telephone equipment sales, compared to nearly 16 percent in 1985. The importance of telephone equipment trade, in other words, tripled in just ten years. This highlights the importance of expanding foreign market access for American firms while, at the same time, reexamining self imposed trade [i.e., line-of-business] restrictions [on the Bell Companies]."

  - Given the rapid "globalization" of telecommunications markets, and the adverse effect that the line-of-business restrictions clearly have had on R&D (see p. 23-26 of NTIA Report) and U.S. competitiveness (see p. 105-112), it is surprising that the NTIA Trade Report appears to favor retaining the most protectionist elements of the AT&T consent decree.

AT&T CONSENT DECREE AND U.S. COMPETITIVENESS

NTIA Trade Report: Policy Recommendations v. Major Findings
(continued)

* At page 23 of its Trade Report, NTIA notes that the line-of-business restrictions in the AT&T consent decree adversely effect "the efficient functioning ... of the communications services market." The restraints have this practical effect by "sheltering firms which supply advanced terminal equipment from their most likely competition, namely, those [i.e., the Bell Companies] which would compete by offering comparable services using central office equipment gear. Consequently, the 'information service' restriction not only skews the market in favor of terminal equipment suppliers, many of whom are foreign firms. It also tends to afford them the functional equivalent of a protected U.S. market."

  - While the NTIA Trade Report does not say so, it is nonetheless apparent that restricting the Bell Companies from developing central office switching equipment and related software systems has the same harmful effect on U.S. trade as the information service restriction. The reasons are two fold. First, nearly all information services (e.g., voice storage and retrieval) that the Bell Companies could bring to the market in competition with terminal equipment manufactured by foreign firms will be created through central office technology. Second, unless the Bell Companies exercise better control over their technology, U.S. and foreign equipment manufacturers that produce central office switches and competing customer premises equipment (e.g., PBXs) will be encouraged to manage the introduction of new technology in ways that would favor demand for terminal equipment.

* At page 62, NTIA also recognizes that "AT&T ... is today clearly in the process of establishing commercial and other relationships [e.g., joint ventures] with many of the world's leading foreign-based telecommunications firms, as are GTE, IBM, and most other major U.S.-based players. The set of world-class, foreign-based companies available to the Bell companies for joint venture purposes may be limited."

  - If NTIA believes potential joint ventures between the Bell Companies and major foreign manufacturers should be used as a vehicle for pressuring foreign governments to open their national telecommunications markets to U.S. suppliers, one must wonder why the same federal policies should not apply to all U.S. firms, including AT&T. To single out the Bell Companies in this regard is clearly discriminatory. It also would have the practical effect of protecting AT&T, and established foreign manufacturers from competition. (See Appendix A for selected U.S. joint ventures with Japanese and European manufacturers.)

NTIA'S PROPOSAL TO REGULATE JOINT VENTURES BETWEEN BELL COMPANIES AND FOREIGN FIRMS

Who Would Be Allowed to Joint Venture and Under What Circumstances?

It also is doubtful that NTIA has considered the pitfalls of regulating potential joint ventures between the Bell Companies and foreign manufacturers, even for those ventures that would be based in the U.S..

- Even if NTIA were able to establish "acceptable" guidelines for approving joint ventures, administering these types of regulations with any degree of consistency or fairness would be virtually impossible. For example:

  - How different would trade practices between the U.S. and a foreign government have to be before they would negate joint ventures involving a Bell Company? How would such differences be measured?

  - Would differences in trade practices apply to certain types of telecommunications equipment (e.g., central offices switches), telephone equipment in general, or to all goods and services?

  - How would NTIA (or some other federal bureaucracy) evaluate joint venture proposals involving a Bell Company and a multinational corporation? What about those joint ventures that promise to locate some portion of their production capacity in the U.S. or in a "third party" country that has good trade relations with the U.S.?

  - What procedures would be available to appeal the government's "policing" of joint venture proposals involving the Bell Companies and foreign firms? On what grounds might those appeals be based? Could the government consistently administer this process in a non-discriminatory manner? How quickly would decisions be made in an atmosphere that demands swift decisions?

  - Would the oversight, by a federal agency, of potential joint ventures conflict with existing international trade agreements and treaties? How might such conflicts be resolved?

NTIA'S PROPOSAL TO REGULATE JOINT VENTURES BETWEEN BELL COMPANIES AND FOREIGN FIRMS

One need only look to U.S. trade relations with Canada to illustrate the practical difficulties that NTIA, or any other Federal bureaucracy, would encounter in regulating joint ventures between the Bell Companies and foreign manufacturers.

- At page 84 of its Trade Report, NTIA boldly asserts that "any Bell Company choosing to diversify into switch manufacturing would enter into a joint venture with a Japan-based firm ... or perhaps with West Germany's Siemens organization." This is not only rank speculation on NTIA's part, it is also wrong. Some Bell Companies would be more likely to joint venture with independent U.S. firms, or for that matter, Northern Telecom of Canada. Northern Telecom, after all, does not compete in local service markets as do AT&T and IBM, and currently supplies nearly 35 percent of all Bell Company central office switching equipment requirements. As such, Northern Telecom has considerably more experience in identifying and satisfying user requirements in the U.S. than Siemens, any Japan-based manufacturer, or most other potential joint venture partners.

- NTIA may have difficulty disallowing joint ventures between Northern Telecom and one or more Bell Companies, largely because nearly all Northern Telecom equipment sold in the U.S. is now produced here -- by more than 20,000 American workers. U.S. investors also have a significant equity interest in Northern Telecom.[1] These are just a few of many considerations that illustrate the thicket NTIA would be thrown into if its proposal to "police" joint ventures were actually adopted.

- If Northern Telecom were prevented from joint venturing with the Bell Companies (even in the U.S.) the U.S. market for central office equipment could possibly become less competitive. If so, the cost of that equipment to local telephone companies (and ultimately to the ratepayer) would increase accordingly. Disbursement of universal information services also could be slowed if AT&T gained greater control over central office switching technology, and used that control to establish an unfair competitive edge over the Bell Companies in local information service markets.

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[1]Bell Canada owns only 51 percent of Northern Telecom. Much, if not most, of the remaining equity is held by American investors.

NTIA'S PROPOSAL TO REGULATE JOINT VENTURES BETWEEN THE BELL COMPANIES AND FOREIGN FIRMS

(continued)

- If NTIA did not disallow potential joint ventures between the Bell Companies and Northern Telecom, as it clearly should not, market circumstances may make it equally difficult to deny partnerships with other foreign firms -- at least without totally alienating European or Japanese trade officials.

  - AT&T and Northern Telecom control 49 and 35 percent of the U.S. central office equipment market, respectively. GTE currently accounts for an additional 10 percent, while the remaining 6 percent are divided between the major European and Japanese manufacturers. (See Figure 2)

  - AT&T and Northern Telecom each have a 25 percent share of the world central office equipment market. Their next largest rival, CIT-Alcatel has a 13 percent share of the global market while the average share of the six (or so) remaining manufacturers is about 5 percent. (see Figure 3)

- Equally troublesome, NTIA's proposal to regulate Bell Company joint ventures could give established equipment manufacturers, including some foreign firms, opportunities to manipulate U.S. trade policies in ways that maximize their profits at the expense of American consumers.

  - Certain American manufacturers have exceptionally good working relationships with Japanese and European PTTs. So too, obviously, do manufacturers that are affiliated with national telephone monopolies in Europe (e.g., Siemens in West Germany) and Japan (i.e., NEC).

  - Some firms may try to use these relationships to deny or delay U.S. government approval of Bell Company joint ventures since that could exclude a major segment of the U.S. telecommunications industry from international equipment markets. This could be done, for example, by encouraging the PTTs to resist making trade concessions that might be necessary to obtain U.S. government approval of proposed joint ventures.

In the final analysis, NTIA's proposal to regulate Bell Company joint ventures would do little more than subject one half of the U.S. telecommunications industry to yet another layer of regulation. This, in turn, will create new opportunities for established manufacturers -- foreign and domestic -- to use the Federal regulatory process for purposes of insulating themselves from competition with other American firms. The Commerce Department should not put itself in a position to become party to this type of activity.

Figure 2
U.S. Central Office Equipment Market:
Supplier Shares
(percent of lines shipped annually)

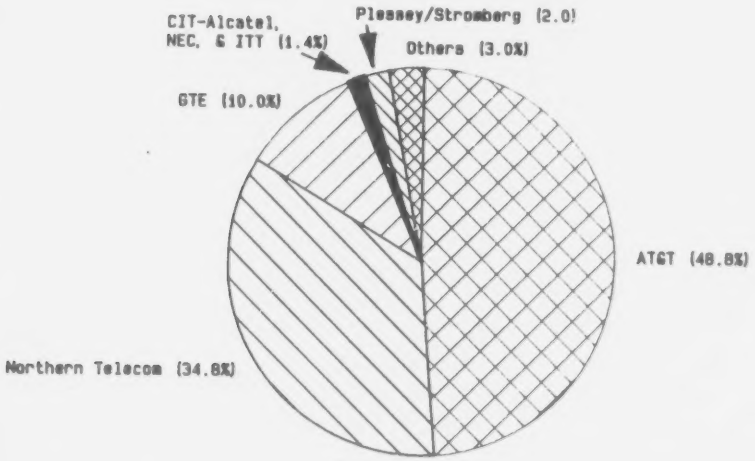
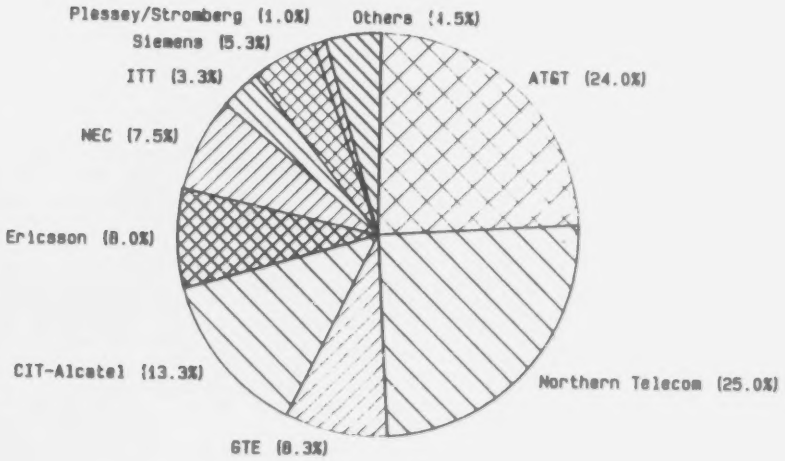


Figure 3
World Central Office Equipment Market:
Supplier Shares
(percent of lines shipped annually)



COMPETITION IN DOMESTIC LONG DISTANCE SERVICE MARKETS AND U.S. TRADE

NTIA should not use U.S. trade considerations as a rationale for opposing the DoJ's recommendations on the interLATA long distance restriction, particularly since AT&T totally dominates the long distance market and shows no sign of loosing its 85 percent market share.

- For a variety of reasons discussed above (see pp. 4-7), Federal policy should not protect AT&T's long distance earnings on the grounds that these profits are needed to finance AT&T's R&D programs, and to keep the U.S. on the cutting edge of new technology. Because the line-of-business restrictions have effectively eliminated incentives for the Bell Companies to conduct R&D, the removal of these incentives will result in a major increase in total U.S. industrial R&D spending on telecommunications, even if AT&T were to cut back its own R&D commitments (which it is unlikely to do for purely competitive reasons).

- It is equally specious to suggest that removing the interLATA restriction will hurt U.S. trade because the Bell Companies would build their own long distance networks using transmission facilities purchased from AT&T's foreign equipment competitors.

  - Even if the court adopts the DoJ's proposals to modify the interLATA long distance restriction in the AT&T consent decree, it could be years before the Bell Companies will be able to comply fully with all suggested preconditions set forth by the DoJ as a <u>quid pro quo</u> for entering this market. It is even more speculative to suggest that the Bell Companies, at some later point in time, would be inclined to build their own interstate networks -- particularly since capacity that is now being installed by facilities-based long distance carriers may be more than sufficient to accommodate all traffic requirements. In any case, it is virtually certain that replacing the interLATA restriction with a reasonable set of alternative safeguards will <u>not</u> adversely effect U.S. trade in the foreseeable future.

COMPETITION IN DOMESTIC LONG DISTANCE SERVICE MARKETS AND U.S. TRADE

(continued)

* As is true of the U.S. domestic long distance market, AT&T dominates the U.S. transmission equipment market with a 49 percent market share. In contrast, no single Regional Bell Company accounts for more than 10 percent of all transmission equipment purchased in the U.S. annually.

U.S. Telco Transmission Equipment Market Shares
(Percent of Sales to U.S. Telcos, 1985)

Firm	Market Share
AT&T	49%
Rockwell	7
Northern Telecom	6
NEC	4
General Cable	3
Ericsson	3
Siecor	2
ITT	2
Lynch	2
R-Tec	2
GTE	2
Others	18%
	100%

Source: DoJ/Huber Report

* Given AT&T's dominance in this market, the adoption of protectionist trade policies may not only encourage AT&T to charge higher prices for transmission equipment sold in the U.S.. They also could harm U.S. trade long-term, since profiteering by U.S. producers that are insulated from competition can drive U.S. buyers to foreign suppliers once protectionist trade policies are eliminated (see Figures 4 and 5). Moreover, since AT&T transmission equipment is used extensively in local telephone networks, higher prices paid for this equipment tend to increase the cost of providing local regulated telephone service and, hence, local rates.

Thus, preventing the Bell Companies from competing in domestic long distance markets, out of concern for AT&T's competitive position in U.S. and global telecommunications transmission equipment markets, would be detrimental to the interests of American consumers.

Figure 4

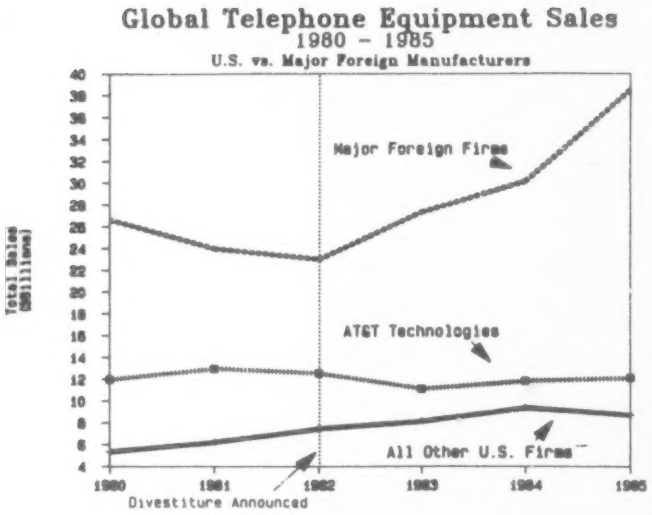
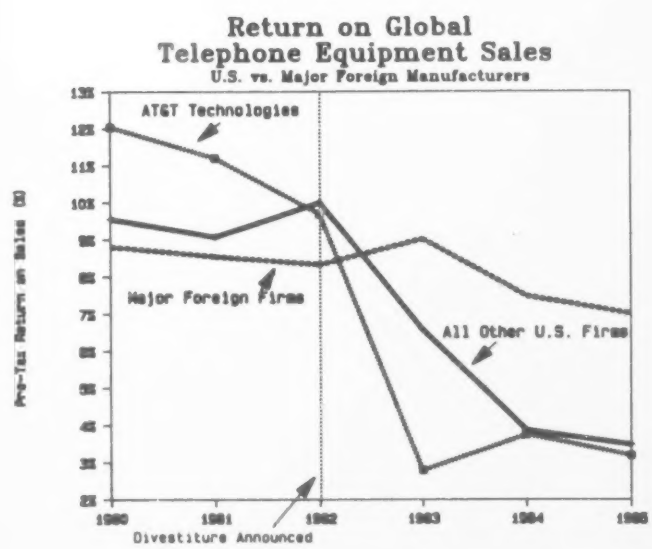


Figure 5



Source: Standard and Poor's Compustat Service

CHANGING THE AT&T CONSENT DECREE IN WAYS THAT WILL PROMOTE U.S. TRADE

Preferred Policy Solutions

If America is to become more competitive in global telecommunications markets, the U.S. telecommunications industry, as a rule, will have to be managed more efficiently than it is today. The Federal government can help achieve this goal in two ways.

- To the extent possible, remove impediments to competition in domestic markets, thereby forcing American firms to lower their costs and become more responsive to customer needs both here and abroad. Modifications to the AT&T consent decree recently proposed by the DoJ would have this effect and if they are adopted, all U.S. firms will have no choice but to become more competitive both domestically and globally, to the benefit of the U.S. balance of trade. The DoJ's recommendations, therefore, warrant the active support of NTIA, the Department of Commerce in general, and all other government agencies that are charged with promoting U.S. trade interests.

- If, for whatever reason, NTIA cannot fully support the DoJ's recommendations and continues to adhere to protectionist policy proposals outlined in its Trade Report, NTIA should, at a minimum:

  - Broaden its proposal to regulate joint ventures between foreign manufacturers and <u>all</u> U.S. firms, not just the Bell Companies.

  - Clarify the specific guidelines that would be used to approve or deny joint venture proposals, and fully describe how these guidelines would be administered and by whom.

  - Explain whether the U.S. government's regulation of joint ventures involving foreign firms would conflict with existing trade agreements and/or treaties, and how these conflicts might be resolved?

APPENDIX A

SELECTED U.S. JOINT VENTURES WITH JAPANESE AND EUROPEAN COMPANIES

SELECTED U.S. JOINT VENTURES WITH JAPANESE COMPANIES

AT&T

Kokusai Denshin Denwa (KDD)
Joint "trial program" with AT&T, KDD, and British Telecom International to offer one-stop shopping for international private-line services. Utilizes undersea cable, satellite analog private line, and digital data services; allows central ordering and billing. If test successful, scheduled for 1988 implementation. (CommunicationsWeek 2/2/87)

Above program, called "Account Management Plus," will initially cover four services: analog private line service via undersea cable or satellite and three varieties of 56-kilobit digital data services, 1) service between U.S. and U.K on undersea cable, 2) and 3) service among any or all of the countries provided by either small or large earth station international satellite. AT&T, BTI, and KDD also said they will continue joint development of other advanced international service offerings, including a range of ISDN capabilities. (PRNewswire 1/28/87)

Nippon Telegraph and Telephone (NTT)
NTT signed technology transfer agreement with AT&T in 1985. (Datamation 9/1/86)

NTT has "procured" satellite echo cancellers and the ATO MICS network management system from AT&T. (CW 12/15/86) The echo cancellers, sold to NTT in 1983 for $3.2 million, malfunctioned. (Business Week 11/24/86)

Fujitsu Electric Company
Fujitsu is close to signing deal with AT&T to distribute 5ESS digital Central office switch, 3B minicomputers and System 85 PBX in Japan, possibly in exchange for help in building a line of Unix-compatible mainframe computers. AT&T would not comment. (CommunicationsWeek 12/8/86)

AT&T also is partner with Fujitsu and other companies in a value-added network consortium in Japan. (CommunicationsWeek 12/8/86) This partnership is made up of 18 Japanese companies including Fujitsu, Nissan, and the Industrial Bank of Japan and is called "Japan Enhanced Network Service Corp." AT&T will own 50 percent and has a $12 million (?) equity investment in the new company. Enhanced services in Japan will be provided via switches supplied by Fujitsu. AT&T will later supply its own larger 1PSS (?) switch as the demand for packetswitching on the network increases. Hajime Hirota, former managing director of Industrial Bank of Japan, will serve as president and CEO of joint venture company. (Electronic News 11/86 ?)

Toshiba Corporation
AT&T "has deals" with Toshiba Corporation for the System 75 PBX. (CW 12/8/86) This is an agreement to "market AT&T's digital PBXs. (Business Week 11/24/86).

Ricoh Co. Ltd
AT&T and Ricoh Co. Ltd. announced that they had formed AT&T Ricoh Co. Ltd. as a joint venture concern that would market AT&T small telephone systems in Japan. AT&T, which would hold a 51% capital share of the venture, would transfer technology to the venture concern to manufacture AT&T model telephone systems adapted for the Japanese market. (Standard & Poor's News 7/30/85)AT&T "has deals" with Ricoh for facsimile machines. (CommunicationsWeek 12/8/86) Ricoh shipped more than 1,000 small AT&T phone systems this year (1986) and recently sold first of AT&T's new line of minicomputers in Japan. (Business Weed 11/24/86)

IBM/Rolm

Nippon Telegraph and Telephone (NTT)
Joint venture with IBM called Nippon Information and Communications Co. (NI&C), is NTT attempt to utilize its telecommunications software knowledge. (CommunicationsWeek 8/25/86)

In planning stages of joint venture (9/30/85) NTT would name president, and IBM would select second leading official. Equipment for network expected to be IBM network control computers of the 308X family, various IBM workstations, including the PC/AT, and Rolm switches. (Electronic News 9/30/85)

NI&C was "born" December 1985, is equally held by NTT and IBM, and began business in January 1986. Firm has about 80 employees, 20 from IBM Japan and remainder from NTT. According to NI&C, first-year revenues are targeted at $25 million. Will focus on providing network systems and services in Japan. NI&C plans to sell IBM's Information Management Service as a VAN, as well as "any type" of IBM equipment and services. Only IBM equipment is offered by NI&C. In addition to custom systems, NI&C will sell and maintain software packages for SNA as well as provide gateways and consulting services for linking international telecommunications networks. (Datamation 2/1/86)

NTT reassured other Japanese firms that main purpose of joint venture was to develop Open Systems Interconnection (OSI) inter-faces between its own Data Communications Network Architecture (DCNA) and IBM's Systems Network Architecture (SNA). (Datamation 9/1/86)

Nippon Information and Communication Corp. has developed software to connect NTT's DRESS value-added network system and IBM's mainframe computers (NTT network runs on DCNA protocol, IBM systems feature SNA protocol). NI&C expects strong demand for the software because NTT has about 5,000 DRESS customers and many of them use IBM mainframes. (Japan Economic Journal 1/3&10/87)

Mitsubishi
Rolm Japan Ltd., aided by marketing partners Mitsubishi Corp. and Omron Tateishi Corp., has sold more than 150 office phone switches. (Business Week 11/24/86)

Mitsubishi signed deal to collaborate with Rolm on digital PBXs. (Datamation 9/1/86)

IBM has joint venture with the Mitsubishi family of companies to operate VAN services. Network is being designed to link IBM and Mitsubishi computers. (Electronic News. 9/30/85)

Tateishi
Marketing partner with Rolm Japan Ltd. (see Mitsubishi).

MISCELLANEOUS

Fujitsu Business Communications plan merger with GTE Business Communication Systems Inc. (CommunicationsWeek 12/22/86) In earlier CW referred to as Fujitsu "discussing" a joint venture PBX deal with GTE Communications Systems. (CommunicationsWeek 12/8/86)

AT&T has been forming joint venture agreements to manufacture its 5ESS digital switches in Korea and Taiwan. AT&T Taiwan Communications is joint venture of AT&T International and Taiwan's Directorate General of Telcomm., Bank of Communications and the Yao Hua Glass Company. (CommunicationsWeek 9/22/86)

NTT has engaged in joint development of silicon wafer technology with Texas Instruments and Motorola. (CommunicationsWeek 12/15/86)

NTT signed joint R&D projects totaling $7 million with at least four U.S firms: GTE-Laboratories, Westinghouse Electric, SRI International, and Batelle Memorial Institute. Project areas cover a wide variety of research into materials, integrated optical integrated circuits, coherent time-domain optical memory, and natural language dialogue with computers. (Electronic News 9/23/85)

SELECTED U.S. JOINT VENTURES WITH EUROPEAN COMPANIES

AT&T

Philips (Netherlands)
Philips and AT&T will set up a joint venture company to market a switching system based on Bell technology, using Philip's experience in the digital switching field; part of Philips plan to introduce integrated telecommunications and data processing products. (Data Processing 3/83)

ATT-Philips Telecom, based in Netherlands, is a new joint venture telecommunications company formed by Philips Lamp and AT&T to manufacture and sell telephone equipment. AT&T will provide telephone exchange know-how while Philips Lamp will mainly contribute through its sales network. The new company will market its equipment throughout the world, except for the U.S., and will employ 5,000 people in the Netherlands. CIT-Alcatel may also participate in the joint venture company. (Agence Economique and Financiere 9/3/83)

AT&T and Philips have teamed up to supply digital switches and transmission equipment in Europe, the Middle East, and parts of South America. (Datamation 6/1/85)

AT&T and Philips Telecommunications (APT) won contract valued at $750 million over 20 years to supply Dutch telephone system with switching equipment. (Wall Street Journal 3/15/85)

AT&T and Philips Telecommunications (APT) have received $11.25 million order from Turkish PTT for installation of 565-megabit-per second digital transmission system. System is manufactured at APT's Netherlands factory; other orders have been received from U.S., England, Finland, and Switzerland. (CommunicationsWeek 8/11/86)

AT&T and Philips Telecommunications B.V. (APT) received letter of intent from British Telecom. to purchase a 5ESS digital switching system for a Centrex test in London. APT has already sold 10 5ESSs to BT; this is first intended for local exchange switching. (Communications Week 8/11/86)

Compagnie Generale de Construction Telephonique (CGCT)/Compagnie Generale d'Electricite (CGE)
AT&T through, its joint venture with Philips (APT), made bid to buy into CGCT, France's second public switch manufacturer which has 16 percent of French switch market. Part of deal would require AT&T to make other commitments to CGE, France's dominant switch manufacturer, to either form a joint venture to manufacture transmission equipment; buy transmission equipment; aid CGE in addressing U.S. market or some combination of these three criteria. Deal running into political problems partly as result of CGE/ITT venture. French government under pressure from Germany, Italy, and Britain, who claim right to CGCT's share of French switch market; has delayed decision on APT bid. One of AT&T's main goals is to increase its sales overseas and CGCT purchase is key to achieving that objective. (CommunicationsWeek 9/29/86 and 10/27/86)

Alcatel Thomson (France)
AT&T attempting to get into French market through joint venture between APT and Alcatel Thomson (subsidiary of CGE). French opposition to deal argue that Alcatel would not get enough new business out of arrangement to make it worthwhile. To make deal more attractive APT is proposing setting up a joint venture with Alcatel-Thomson to make microwave transmitters in France. (Economist 12/07/85)

Olivetti (Italy)
AT&T Information Systems announced that its System 75 PBX will be manufactured and sold in Italy by Olivetti. (AT&T owns 25 percent of Olivetti). Deal is AT&T's first venture into European PBX market; "part of [its] larger plan to be a serious contender internationally. PBXs will only be sold in Italy. (Communications Week 9/15/86)

IBM/Rolm

British Telecom
IBM is attempting to create alliances with Common Market telecommunications companies including British Telecom and STET, the Italian telephone company. The proposed joint venture between IBM and British Telecom would use IBM's System Network Architecture rather than ISO, which the Common Market is trying to establish as the European standard. (New York Times-National Edition 9/13/84)

February 85 IBM Europe joined with British government, British Telecommunications plc, Digital Equipment Corp. and ICL (UK computer manufacturer) in three-year project to develop software that would test conformance of products to Open Systems Interconnection (OSI) standards. Established centers Germany and Italy for OSI research and development. (CommunicationsWeek 9/22/86)

Reorganization of IBM Europe considered sign that big blue is planning to enter European public telecom switch market. Is expected to seek European partner in effort. (Communications Week 8/18/86)

GTE

Siemens
Siemens AG will pay GTE Corp. $420 million in exchange for an 80 percent interest in the joint venture the two companies are forming. In return GTE is giving Siemens an 80 percent stake in its U.S. transmission business and in its overseas operations in transmission, business systems and public switching in Taiwan, Italy and Belgium. Both companies U.S. public switching operations were not included in deal. As result of deal Transmission Division of GTE's Communications Systems Inc. unit will become subsidiary of Siemens Communication Systems Inc., Boca Raton, FL.

Joint venture company will be located in U.S.; site undetermined. Will combine Siemens' international transmission business with GTE's domestic and international transmission and international switching operations. Siemens hopes to gain entry into U.S. transmission market through GTE, especially through its captive telcos. GTE hopes to gain international presence and R&D dollars from Siemens.

When combined with the joint venture, Siemens will control 10 percent of the world transmission market behind AT&T and NEC.
(CommunicationsWeek 9/4/86)

Italtel (Italy)
Developed digital central office switch, Linea UT, in conjunction with GTE Corp. and Telettra, Fiat's telecommunications subsidiary. (CommunicationsWeek 9/4/86)

G&T (Italy)
GTE Communications Systems Corp. signed agreement with G&T of Milan (owned by GTE Telecomunicazioni SpA and Telettra) to handle U.S. distribution of G&T's GT-N45 line of high capacity digital microwave radio equipment. Agreement ultimately will become part of GTE's joint venture planned with Siemens AG (see above). (CommunicationsWeek 9/4/86)

OTHERS

Honeywell/Bull (France)
Honeywell plans combination with Groupe Bull S.A. and NEC in information systems business (group previously owned by Honeywell alone). Honeywell will hold 42.5% interest (expected to be reduced to 19.9% in 1988), NEC 15%-20%, and Bull the remainder.

Honeywell/Ericsson
Honeywell Ericsson Development is a new joint venture owned 50-50 by Honeywell and Ericsson Information Systems, a member of the Ericsson Group. Under the accord, Ericsson will contribute its technology in voice and data communications products and in exchange gain wider access to the U.S. market through Honeywell's established customer base. Both firms will sign a technology exchange and licensing accord under which Honeywell would by a stake in the Ericsson advanced digital telephone exchange and technology involving the switching of long-distance data communications. (New York Times 9/6/83)

Ericsson/Honeywell joint venture is part of trend of PBX manufacturers establishing cooperative agreements with computer manufacturers to control office information and communications markets. PBX and computer manufacturers can avoid R&D efforts that overlap into each other's product areas to gain large corporate customers of telecommunications, computer, and office equipment. (Electronic News 7/16/84)

Honeywell also planning to phaseout Honeywell Ericsson Development Co., a joint venture with L.M. Ericsson Telephone Company (Standard and Poor's News 12/17/86)

AT&E/Telic-Alcatel
AT&E Systems Inc. (voice mail system manufacturer) signed development and distribution agreements with Telic-Alcatel (France), a subsidiary of Compagnie Generale d'Electricite.

DEC/Ericsson
Ericsson Information Systems (computer and PBX subsidiary of L.M. Ericsson) and Digital Equipment Corp. have agreement to combine Ericsson teller equipment and software with DEC computers to pursue banking information systems markets worldwide. Deal currently covers only Europe; looking towards U.S. market. Deal calls for creation of joint development organization in Stockholm, owned 50-50, and employing 20 to 30 people in first year; will include complete R&D facility. Will develop turnkey system to supply banks with their own database/-processing centers to service their branches instead of utilizing communications lines. CommunicationsWeek 9/22/86)

Orion/Philips
Orion Group and Philips International announced plans to integrate Orion software into Philips products to allow Philips to link products into IBM's Systems Network Architecture environments. (CommunicationsWeek 9/22/86)